

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, June 11, 2015 11:31 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: FW: Monthly Bromate Results
Attachments: May 2015 Bromate.pdf

fyi, ND

Adam

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Thursday, June 11, 2015 11:29 AM
To: Rosenthal, Adam (DEQ)
Subject: Monthly Bromate Results

Adam,

Here is a copy of the bromate test results from the month of May.

--

Mike Glasgow
Utilities Administrator
City of Flint

**NSF International**789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

TEST REPORT

Send To: C0211289Mr. Michael Glasgow
City of Flint, Municipality
1101 South Saginaw Street
Flint, MI 48502**Facility: C0211290**City of Flint Water Plant
4500 North Dort Highway
Flint MI 48505
United States

Result	COMPLETE	Report Date	08-JUN-2015
Customer Name	City of Flint, Municipality		
Tested To	USFDA CFR Title 21 Part 165.110		
Description	Municipal Water		
Test Type	Test Only		
Job Number	J-00176235		
Project Number	10005233 (CL17)		
Project Manager	Anna Ciechanowski		

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization

Kerri Levanseler - Director, Chemistry Laboratory

Date 08-JUN-2015

**General Information**

Standard: USFDA CFR Title 21 Part 165.110
Date and Time Sampled: 05/26/2015 07:45 EDT
Product Description: Municipal Water
Test Description: Bromate - May 2015 - Additional

Sample Id: S-0001160148
Description: Municipal Water - 05/26/2015 07:45 EDT
Sampled Date: 05/26/2015
Received Date: 05/29/2015

Testing Parameter	Reporting Limit	Result	FDA SOQ	Units	P / F
Disinfection Residuals/Disinfection By-Products					
Bromate	5	ND	10	ug/L	Pass



<<Additional Information>>

Sample Id: S-0001160148

Test Parameter	Date Analyzed	Time Analyzed	Date Prepared/ Processed
Disinfection Residuals/Disinfection By-Products			
Bromate (Ref: EPA 300.1)	3-JUN-2015		


Testing Laboratories:

	Flag	Id	Address
All work performed at: (Unless otherwise specified)	→	NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C3015	Bromate (Ref: EPA 300.1)

Certifications:

Arizona (# AZ0655)	California (# 03214 CA)	Connecticut (# PH-0625)
Florida (# E-87752 FL)	Hawaii	Indiana
Maryland (# 201)	Michigan (# 0048)	North Carolina (# 26701)
New Jersey (# MI770)	Nevada (# MI000302010A)	New York (# 11206)
Pennsylvania (# 68-00312)	South Carolina (# 81005)	Virginia (# 00045)
Vermont (# VT 11206)		

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

The reported result for Odor, Phenolics, Potassium, Specific Conductance and Total Residual Chlorine cannot be used for compliance purposes within the State of Arizona.

Notes:

- 1) Bottled water sold in the United States shall not contain Fluoride in excess of the levels published by the USFDA in 21 CFR Part 165.110. These levels are based on the annual average of maximum daily air temperatures at the location where the bottled water is sold at retail. Please refer to the most current edition of the regulation to determine the Fluoride maximum level that pertains to your product.
- 2) A blank on the FDA SOQ column indicates that no maximum level has been established by the FDA for that contaminant.
- 3) An ND result means that the contaminant was not detected at or above the reporting limit.

For a list of NSF International Method Detection Limits refer to
http://www.nsf.org/media/enews/documents/minimum_detection_level_spreadsheet.pdf.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Monday, June 08, 2015 9:32 AM
To: Prysby, Mike (DEQ)
Subject: RE: more customer lead samples over the AL?

We have 28 samples, 4 are over the AL for lead, (42, 22, 20 & 17 ppb), 2 in red are marked other though. If they count, the 90th would be 17.6 rounding to 18 ppb. If they don't, then the 90th would be 11.2 or 11 ppb. They are required 100 samples for this 2nd 6 month round. Hopefully the rest are below.

Adam

From: Prysby, Mike (DEQ)
Sent: Friday, June 05, 2015 7:16 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: more customer lead samples over the AL?

Adam,

Do a quick check as to where Flint is at on their PB/Cu monitoring (Jan 1 – June 30th round) and whether we have all (or most) of the sample results in to determine where their AL is at..... If this issue heats up again...it would be helpful to know that the city continues to meet the PB/CU ALs.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, June 05, 2015 7:09 AM
To: Crooks, Jennifer; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Poy, Thomas
Subject: Re: more customer lead samples over the AL?

Slight correction...most old pipe from the home *to the shut-off* is galvanized, and the majority of lead they have seen is from the shut-off to the main. Apologies for not getting this report written up, but I keep getting sidetracked with NDWAC LCR and RTCR primacy packages. I will try to get that written up and out to you in the next week.

If I get copies of the latest results I will forward them, but my understanding is that the DEQ lab runs the samples, so they should be available within DEQ as well.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, June 4, 2015 03:05 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); cookp@michigan.gov
Cc: Deltoral, Miguel; Poy, Thomas
Subject: more customer lead samples over the AL?

I talked with Miguel this week; he learned that there have been 2 more customer-requested lead samples that have come back over the AL: 22ppb and 40 ppb. These were customer-requested samples taken by Mike Glasgow and analyzed at the Flint lab. When I receive the lab reports, I'll email them to you—or Mike Glasgow should have copies of all the customer-requested lead sample results he's taken. Greg Waldorf, the contractor that replaced Ms. Walters' service line on Wed May 6, said that many of the customer services are galvanized from the customer to the water main, but they also have a lead line that connects the shut-off valve with the water main—which would make the lead piping City-owned.

Jennifer

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, May 26, 2015 2:52 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Flint 2nd qtr15 TTHM MCL letter
Attachments: Flint DBP MCL 2Q15.doc

This is located in the Flint/TTHM folder on the district drive.



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

XXXX, 2015

Mr. Brent Wright, Operations Supervisor
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice (VN) – Maximum Contaminant Level for Total
Trihalomethanes (TTHM)
Operational Evaluation – Total Trihalomethanes
2nd Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the city of Flint (City) is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels for disinfection byproducts (MCLs)*, of the 1979 Administrative Code.

In accordance with R 325.10610, *MCLs*, of the 1979 Administrative Code, the MCL for disinfection byproduct TTHM is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City's highest TTHM locational running annual average (LRAA), based on the last four quarters, ending June 30, 2015, is 0.094 mg/L which exceeds the standard, however all eight sample site locations for the 2nd quarter 2015 are below the standard of 0.080 mg/L.

Further, in accordance with R 325.10719I, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, when an operational evaluation level (OEL) at a monitoring location for TTHM exceeds 0.080 mg/L, a supply shall conduct an operational evaluation and submit a written report of the evaluation to the DEQ not later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. As listed in the table below, our records show that the TTHM OELs for the City exceed 0.080 mg/L at one of the City's eight sample site locations.

Mr. Brent Wright

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March 5, 2015

TTHM Results (mg/L)	8/21/14	11/20/14	2/17/15	5/18/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.145	0.059	0.0162	0.0514	0.068	0.044
DBP2 Liquor Palace 3302 S. Dort Highway	0.127	0.033	0.0168	0.0635	0.060	0.044
DBP3 North Flint Auto 6204 N. Saginaw St.	0.118	0.041	0.0149	0.0452	0.055	0.037
DBP4 University Market 2501 Flushing Road	0.196	0.094	0.0245	0.0598	0.094	0.059
DBP5 Taco Bell 3606 Corunna Road	0.181	0.034	0.0151	0.0547	0.072	0.040
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.144	0.054	0.0192	0.0605	0.069	0.048
DBP7 Salem Housing 3216 MLK Boulevard	0.112	0.050	0.0285	0.0727	0.066	0.056
DBP8 BP Gas Station 822 S. Dort Highway	0.112	0.036	0.0199	0.0461	0.054	0.037

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on XXXX, 2015, and will continue until TTHM LRAA is below the MCL at all sample sites.

We are encouraged by the results from the most recent round of compliance samples collected on May 18, 2015, which now show individual TTHM levels below the 0.080 mg/L standard at all locations throughout the City's system. Operational Evaluation Reports from December 2014, and February 2015, have identified possible causes and corrective measures for the previous elevated TTHM levels which we encourage the City to continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported in the most recent quarter, and suggest the City may be able to achieve compliance with the TTHM standard at all sites by continuing these efforts.

Our office is currently reviewing the Operational Evaluation Report dated February 27, 2015, and will provide the City and their consultant with comments, as needed, to help address this MCL violation.

Water systems that exceed the OEL must complete and submit an Operational Evaluation in accordance with Administrative Rule 719I (R 325.10719I) within 90 days of being notified of the violation. **An updated Operational Evaluation report, which incorporates the most recent sample results, must now be completed and received by our office by no later than Friday, May 29, 2015.**

If you have any other factual information you would like us to consider regarding the violation identified in this VN, please provide them in a written response by XXXX, 2015.

Mr. Brent Wright

3

March 5, 2015

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery **and** by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN which contains the minimum required language. The City is encouraged to include additional information regarding its response efforts to this violation. **Please notify your consumers by July 1, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the public notice.** This violation must also be included in your 2015 Consumer Confidence Report, due by July 1, 2016. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below; at prysbym@michigan.gov; or rosenthal@michigan.gov; or at DEQ, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water and Municipal
Assistance
517-290-8817

Adam Rosenthal, Environmental Quality
Analyst
Lansing District Office
Office of Drinking Water and Municipal
Assistance
517-284-6644

Enclosure

cc: Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Mr. Jerry Ambrose, Emergency Manager, City of Flint
Mr. Robert Bincsik, City of Flint
Mr. Howard Croft, City of Flint
Mr. Daughtry Johnson, City of Flint
Genesee County Health Department
Ms. Liane Shekter Smith, DEQ
Mr. Richard Benzie, DEQ
Mr. Stephen Busch, DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (August 21, November 20 of 2014, and February 17 & May 18 of 2015). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the MCL. The standard for TTHMs is 80 micro grams per liter ($\mu\text{g/L}$). The location reporting the highest TTHM level was 94 $\mu\text{g/L}$; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent individual sample results were all less than the 80 $\mu\text{g/L}$ standard, however since compliance is calculated using a locational running annual average (LRAA) of the most recent four quarters, we are still out of compliance with the MCL at one of eight locations.

For more information, please contact Mr. Brent Wright at 517-787-6537, or the Flint Water Plant at 4500 North Dort Highway, Flint, Michigan 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

_____ Signature	_____ Title	_____ Date Distributed
Reminder to water supplier: This notice/certification must be sent to the Department of Environmental Quality.		

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, May 26, 2015 1:24 PM
To: Philip, Kris (DEQ)
Subject: CDS

would you please run CDS, have the latest Flint DBPs in and need to run OEL.

thanks,
Adam

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, May 14, 2015 9:50 AM
To: Michael Glasgow
Subject: RE: distribution WQPs

thank you sir.

Adam

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Thursday, May 14, 2015 8:53 AM
To: Rosenthal, Adam (DEQ)
Subject: Re: distribution WQPs

Adam,

Here is the 1st quarter WQP for 2015.

Mike

On Wed, May 13, 2015 at 3:07 PM, Rosenthal, Adam (DEQ) <ROSENTHALA@michigan.gov> wrote:
got it. Now I need the 1st qtr 2015.

thanks,

Adam Rosenthal, EQA

MDEQ – Office of Drinking Water and Municipal Assistance

Lansing District – Constitution Hall 1SW

PO Box 30242

Lansing, MI 48909

517-284-6644

fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:

DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [mailto:mglasgow@cityofflint.com]
Sent: Wednesday, May 13, 2015 11:54 AM
To: Rosenthal, Adam (DEQ)
Subject: Re: distribution WQPs

Adam,

Here are the 2014 WQM parameters during full time plant operation.

Mike

On Tue, May 12, 2015 at 4:32 PM, Rosenthal, Adam (DEQ) <ROSENTHALA@michigan.gov> wrote:

Good afternoon Mike, we did not receive a 2nd half 2014 water quality parameters in the distribution system for the City of Flint. Please email me a copy when you get this.

thanks,

Adam Rosenthal, EQA

MDEQ – Office of Drinking Water and Municipal Assistance

Lansing District – Constitution Hall 1SW

PO Box 30242

Lansing, MI 48909

517-284-6644

fax: 517-241-3571

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DEQ-DWMA-Lansing@michigan.gov

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Wednesday, May 13, 2015 3:08 PM
To: Michael Glasgow
Subject: RE: distribution WQPs

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thanks,

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
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 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

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Sent: Wednesday, May 13, 2015 11:54 AM
To: Rosenthal, Adam (DEQ)
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thanks,

Adam Rosenthal, EQA

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Lansing District – Constitution Hall 1SW

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Lansing, MI 48909

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DEQ-DWMA-Lansing@michigan.gov

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, May 12, 2015 4:33 PM
To: Mike Glasgow
Subject: distribution WQPs

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thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, April 30, 2015 1:14 PM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

According to the lab report, it is 0.001 mg/L.

From: Cook, Pat (DEQ)
Sent: Thursday, April 30, 2015 12:15 PM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Hi Adam - what is the reporting/detection limit for lead on the CMET2 scan?

From: Cook, Pat (DEQ) <COOKP@michigan.gov>

Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel

Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
 Regulations Manager
 Ground Water and Drinking Water Branch
 77 West Jackson Blvd (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:26 PM
To: Busch, Stephen (DEQ)
Cc: Cook, Pat (DEQ)
Subject: RE: Flint Corrosion Control?

Total Lead from the CMET2 on 5/22/14 was zero.

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 1:21 PM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Don't you have a plant tap metals result?

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:03 PM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

I can't find one. Since they weren't over on the 1st 6 month round after going on river water, we didn't require the monitoring.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
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From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 12:03 PM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Adam – can you please tell me Flints source water lead level? (I'm guessing 0, but need to confirm.)

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

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Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
Regulations Manager
Ground Water and Drinking Water Branch
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Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:03 PM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

I can't find one. Since they weren't over on the 1st 6 month round after going on river water, we didn't require the monitoring.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 12:03 PM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Adam – can you please tell me Flints source water lead level? (I'm guessing 0, but need to confirm.)

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel

Cc: Poy, Thomas; Porter, Andrea

Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
Community Drinking Water Unit
Office of Drinking Water & Municipal Assistance
Michigan Department of Environmental Quality
Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
Regulations Manager
Ground Water and Drinking Water Branch
77 West Jackson Blvd (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 10, 2015 12:04 PM
To: Busch, Stephen (DEQ)
Subject: FW: January 2015 MOR
Attachments: January 2015 MOR scan.pdf; January 2015 Bromate Results.pdf

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Tuesday, February 10, 2015 3:56 PM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: January 2015 MOR

Mike & Adam,

Here is copy of the MOR for the month of January. Brent will be sending out a hard copy in the mail today. I have also included the January monthly bromate test results.

Mike Glasgow
City of Flint Water Plant

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANTWSSN: 2310Michael Glasgow

Operator-in-Charge

January 2015

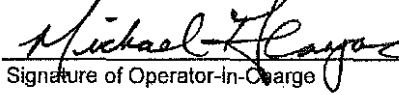
Month/Year

F-1R, F-2

Certification of Operator-in-Charge

F-1

Water Plant Classification



Signature of Operator-in-Charge

Genesee

County

Treatment Rate and Filter Data

Maximum Treatment Rate:	<u>19.3</u>	Million Gallons per Day
Rated Plant Capacity:	<u>36</u>	Million Gallons per Day
Average Filter Run:	<u>76</u>	Hours
Average Head Loss:	<u>n/a</u>	Feet *(filter head loss meters not operational)
Average Filtration Rate:	<u>2.1</u>	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	<u>3.6</u>	Gallons Per Square Feet per Minute
Average Wash Water Use:	<u>3.2%</u>	Percent of Treated Water

Chemical Data

Chlorine on hand:	<u>12,000</u>	lb.	Est. supply:	<u>18</u>	days
Primary Coagulant (Ferric Chloride) on hand:	<u>110,000</u>	lb.	Est. supply:	<u>10</u>	days
Lime (CaO) on hand:	<u>257</u>	tons	Est. supply:	<u>22</u>	days
Fluoride on Hand:	<u>16,630</u>	lb.	Est. supply:	<u>42</u>	days
Cost of All Chemicals per Million Gallons:	<u>n/a</u>	dollars			
Total Power Cost per Million Gallons:	<u>n/a</u>	dollars			

Remarks

Confluence Point # 1 (N)

Confluence Point # 2 (S)

Number of filter confluence samples > 0.3 NTU:

00

Number of filter confluence samples collected:

244242

Percent of filter confluence samples > 0.3 NTU:

0.0%0.0%

Number of filter confluence samples > 1 NTU

00

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month?

NO

If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month?

NO

If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month?

YES

If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month?

NO

If yes, indicate date(s) and duration on a separate sheet.

[illegible]

Filter turbidity

City of Flint Water Treatment Plant
WSSN: 2310

January 2015 Page 3

Date	Turbidity, Units												
	Confluence Point, No.1 (N) North						Confluence Point, No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.07	0.08	6	0	0	8	0.06	0.08	6	0	0	0.08
2	7	0.07	0.09	6	0	0	7	0.06	0.07	6	0	0	0.07
3	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.08
4	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
5	8	0.06	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
6	8	0.08	0.09	6	0	0	8	0.07	0.10	6	0	0	0.07
7	8	0.09	0.15	6	0	0	8	0.07	0.09	6	0	0	0.08
8	8	0.08	0.10	6	0	0	8	0.07	0.11	6	0	0	0.08
9	8	0.06	0.08	6	0	0	8	0.05	0.07	6	0	0	0.07
10	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
11	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
12	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
13	8	0.06	0.12	6	0	0	8	0.05	0.07	6	0	0	0.06
14	8	0.07	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
15	8	0.06	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
16	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
17	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.07
18	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.07
19	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
20	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.11
21	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.09
22	8	0.09	0.11	6	0	0	8	0.08	0.09	6	0	0	0.09
23	7	0.08	0.10	6	0	0	7	0.07	0.09	6	0	0	0.08
24	8	0.07	0.09	6	0	0	8	0.06	0.10	6	0	0	0.07
25	8	0.06	0.07	6	0	0	8	0.07	0.09	6	0	0	0.07
28	8	0.07	0.09	6	0	0	6	0.08	0.10	6	0	0	0.07
27	7	0.08	0.11	6	0	0	7	0.07	0.10	6	0	0	0.06
28	7	0.07	0.09	6	0	0	7	0.07	0.10	6	0	0	0.07
29	7	0.07	0.10	6	0	0	7	0.07	0.08	6	0	0	0.07
30	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.08
31	8	0.06	0.10	6	0	0	8	0.06	0.08	6	0	0	0.07
Avg.	8	0.07	0.09	6	0	0	8	0.07	0.09	6	0	0	
Max.	8	0.09	0.15	6	0	0	8	0.08	0.11	6	0	0	0.11
Min.	7	0.06	0.07	6	0	0	6	0.05	0.07	6	0	0	

Fluoridation &
ChlorinationCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	Fluoride Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.4	0.24	0.70		1.3	3.5	4.8	0.6	0.9	2.7	3.0	2.1	2.4
2	0.4	0.21	0.62		1.4	3.5	4.9	0.6	0.8	2.6	3.1	2.2	2.6
3	0.3	0.22	0.55		1.8	2.6	4.4	0.5	0.7	2.7	3.3	2.8	3.2
4	0.4	0.20	0.60		1.8	2.5	4.3	0.8	1.0	2.8	3.0	2.9	3.2
5	0.4	0.19	0.23		1.9	2.5	4.4	0.7	1.0	2.8	3.0	2.7	3.0
6	0.3	0.19	0.49	0.39	1.9	2.7	4.6	0.6	0.9	2.7	3.2	2.5	3.2
7	0.3	0.23	0.61		1.9	2.6	4.5	0.7	0.9	2.7	3.0	2.2	2.7
8	0.3	0.19	0.51		1.9	2.6	4.5	0.6	0.9	2.4	3.1	2.1	2.6
9	0.0	0.19	0.51		2.0	3.2	5.2	0.4	0.7	2.8	3.1	2.3	2.8
10	0.0	0.22	0.44		1.8	3.1	4.9	0.4	0.4	2.4	2.9	1.8	2.3
11	0.0	0.20	0.22		1.8	3.0	4.8	0.8	1.1	2.7	3.1	2.5	2.9
12	0.0	0.21	0.21		1.6	3.2	4.8	0.5	0.8	2.8	3.1	2.4	2.8
13	0.0	0.19	0.19	0.35	1.7	3.1	4.8	0.8	1.2	2.8	3.1	2.2	2.6
14	0.0	0.21	0.21		1.6	3.0	4.6	0.4	0.6	2.8	3.1	2.3	2.8
15	0.0	0.22	0.24		1.6	3.0	4.6	0.5	0.9	2.7	3.1	2.0	2.3
16	0.1	0.20	0.20		1.6	3.0	4.6	0.5	0.9	2.3	3.0	2.0	2.5
17	0.3	0.22	0.23		1.7	3.0	4.7	0.4	0.6	2.5	3.0	1.8	2.3
18	0.4	0.19	0.55		1.8	3.2	5.0	0.5	0.8	2.7	3.0	2.5	2.9
19	0.4	0.20	0.64		1.9	3.2	5.1	0.4	0.6	2.8	3.2	2.2	2.6
20	0.0	0.22	0.45	0.31	2.0	3.0	5.0	0.5	0.9	2.9	3.4	2.1	2.7
21	0.2	0.21	0.31		1.9	2.8	4.7	0.5	0.8	2.6	3.0	2.2	2.5
22	0.4	0.20	0.67		1.9	2.9	4.8	0.4	0.7	2.8	3.2	1.9	2.2
23	0.4	0.22	0.41		2.0	3.1	5.1	0.4	0.8	2.6	3.0	1.5	1.8
24	0.4	0.21	0.67		2.0	3.2	5.2	0.7	0.9	2.8	3.0	2.7	3.0
25	0.4	0.23	0.59		2.1	3.1	5.2	0.5	0.8	2.9	3.4	2.4	2.7
26	0.4	0.21	0.57		2.0	3.0	5.0	0.4	0.7	2.7	3.1	2.4	2.7
27	0.4	0.23	0.54	0.55	2.1	3.1	5.2	0.4	0.6	2.7	3.0	2.2	2.5
28	0.4	0.22	0.59		2.0	2.9	4.9	0.8	1.0	2.4	2.7	1.9	2.3
29	0.4	0.25	0.82		2.0	2.9	4.9	0.7	0.9	2.8	3.2	2.2	2.5
30	0.4	0.22	0.63		2.0	3.0	5.0	0.7	0.8	2.5	2.9	2.0	2.5
31	0.3	0.19	0.52		1.9	3.0	4.9	0.6	0.8	2.8	3.2	2.8	3.2
Avg.	0.26	0.21	0.47	0.40	1.8	3.0	4.8	0.6	0.8	2.7	3.1	2.3	2.7
Max.	0.40	0.25	0.70	0.55	2.1	3.5	5.2	0.8	1.2	2.9	3.4	2.9	3.2
Min.	0.00	0.19	0.19	0.31	1.3	2.5	4.3	0.4	0.4	2.3	2.7	1.5	1.8

Chemical
AnalysesCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	pH (S.U.)		Total Hardness as CaCO ₃ (mg/L)		Total Alkalinity as CaCO ₃ (mg/L)		Non-Carbonate Hardness as CaCO ₃ (mg/L)		Calcium as Ca ²⁺ (mg/L)		Magnesium as Mg ²⁺ (mg/L)		Chloride as Cl ⁻ (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.23	7.65	323	185	264	65	59	120	108.2	55.3	13.6	11.7	47	85
2	7.84	7.31	324	193	258	78	66	117	121.0	65.7	6.3	4.9	47	87
3	7.77	7.38	323	212	257	98	66	114	120.0	77.0	5.8	4.9	48	87
4	8.15	7.86	325	218	261	96	64	122	105.8	64.9	14.6	13.1	48	88
5	8.31	7.80	318	206	262	94	56	112	103.4	60.9	14.6	13.6	45	78
6	8.09	7.97	320	208	256	95	64	113	121.0	69.7	4.9	8.7	48	85
7	8.04	7.91	313	194	256	97	57	97	101.8	61.7	15.8	10.7	43	82
8	8.19	8.04	313	202	251	87	62	115	121.0	72.9	2.9	3.9	48	83
9	8.08	7.98	311	205	248	93	63	112	115.4	70.5	5.8	6.3	47	84
10	7.98	7.75	316	181	255	73	61	108	114.6	64.1	6.8	3.4	47	88
11	8.01	8.24	321	174	256	63	65	111	100.2	44.9	17.5	14.6	44	80
12	8.09	7.68	318	177	250	57	68	120	101.0	46.5	16.0	14.6	49	81
13	7.94	7.69	320	165	245	46	75	119	105.8	44.1	14.1	13.1	47	87
14	7.80	7.62	321	172	262	58	69	114	115.4	58.9	7.8	6.8	48	88
15	7.96	7.64	323	173	258	48	65	125	105.8	48.9	14.1	13.1	45	91
16	7.94	7.47	324	172	257	44	67	128	117.8	58.5	6.8	6.8	47	88
17	7.82	7.95	320	174	252	54	68	120	119.4	58.5	4.9	5.3	46	89
18	8.02	7.72	322	185	258	89	64	116	104.2	55.3	15.1	11.2	48	83
19	8.03	7.62	321	184	255	59	66	125	102.6	54.5	16.0	11.7	48	86
20	7.89	7.59	321	184	265	67	68	117	116.2	64.9	7.8	4.9	49	91
21	7.86	7.79	324	183	257	72	67	111	105.0	51.3	15.1	13.1	50	83
22	7.59	7.42	325	193	262	81	63	112	116.2	68.9	8.3	4.9	49	84
23	7.70	7.44	344	186	256	78	88	108	112.2	59.3	15.6	9.2	52	87
24	7.91	7.51	327	187	259	72	68	115	101.0	48.1	18.5	16.0	48	85
25	7.93	7.71	326	188	260	75	66	113	100.2	50.5	18.5	14.6	47	85
26	7.95	7.82	328	194	259	71	89	123	105.8	54.5	15.6	13.6	51	88
27	7.77	7.99	332	191	266	68	66	123	111.4	60.1	13.1	9.2	51	89
28	7.99	7.98	334	188	264	76	70	112	107.4	51.3	16.0	14.6	48	85
29	7.80	7.83	334	196	268	76	66	120	106.6	57.7	16.5	12.6	55	86
30	7.84	7.78	331	193	272	78	59	115	113.0	59.3	13.1	10.7	55	90
31	7.96	7.91	335	197	267	69	68	128	108.2	56.1	15.6	13.6	51	92

Avg.	7.95	7.74	324	189	258	73	86	116	109.9	58.5	12.2	10.2	48	86
Max.	8.31	8.24	344	218	272	98	88	128	121.0	77	18.5	16.0	55	92
Min.	7.59	7.31	311	165	245	44	58	97	100.2	44.1	2.9	3.4	43	78

Bacteriological &
Physical ParametersCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colliert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	2592	12	0	1	0	800	< 2	0.37	5.6				
2	1	1684	12	0	1	0	600	< 2	0.36	4.5				
3	1	990	12	0	1	0	2400	< 2	0.42	4.0				
4	1	718	12	0	1	0	200	< 2	0.44	3.8				
5	1	1732	12	0	1	0	5980	< 2	0.41	3.0				
6	1	874	12	0	1	0	200	< 2	0.41	4.5				
7	1	2086	12	0	1	0	200	< 2	0.39	4.2				
8	1	960	12	0	1	0	120	< 2	0.39	5.5				
9	1	1146	12	0	1	0	420	< 2	0.40	2.6				
10	1	2994	12	0	1	0	760	38	0.31	2.6				
11	1	978	12	0	1	0	520	10	0.36	2.1				
12	1	1042	12	0	1	0	600	< 2	0.36	1.9				
13	1	862	12	0	1	0	340	< 2	0.37	1.4				
14	1	646	12	0	1	0	200	< 2	0.36	1.9				
15	1	736	12	0	1	0	300	< 2	0.36	3.5				
16	1	2224	12	0	1	0	200	< 2	0.37	1.9				
17	1	320	12	0	1	0	200	< 2	0.36	4.9				
18	1	40	12	0	1	0	200	2	0.38	4.9				
19	1	148	12	0	1	0	120	< 2	0.40	5.2				
20	1	770	12	0	1	0	148	< 2	0.38	4.9				
21	1	148	12	0	1	0	80	< 2	0.37	5.9				
22	1	201	12	0	1	0	190	< 2	0.39	5.8				
23	1	345	12	0	1	0	120	< 2		4.9				
24	1	97	12	0	1	0	150	< 2	0.38	6.4				
25	1	146	12	0	1	0	60	< 2	0.39	4.4				
26	1	181	12	0	1	0	230	< 2	0.40	3.8				
27	1	146	12	0	1	0	120	< 2	0.36	4.9				
28	1	172	12	0	1	0	128	< 2	0.38	4.3				
29	1	261	12	0	1	0	137	< 2	0.49	4.2				
30	1	155	12	0	1	0	93	< 2	0.43	4.0				
31	1	41	12	0	1	0	60	< 2	0.53	4.0				

Avg.									0.39	4.0				
Max.							5980	38	0.53	6.4				
Min.									0.31	1.4				

**Distribution System
Monitoring**

City of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										Number of Samples
	1	2	3	4	5	6	7	8	CS	WS	
1	0.7	0.1	1.3	1.6	0.7	0.2	0.2		1.5	1.4	9
2											0
3											0
4											0
5											0
6	0.6	0.7	1.5	2.0	0.8	0.1	1.4	1.8	1.8	1.8	10
7	0.6	0.7	1.7	1.5	0.7	0.2	1.1	2.0	0.8	1.7	10
8	0.8	0.3	1.0	1.3	0.8	0.1	1.4	1.8	0.8	1.7	10
9											0
10											0
11											0
12											0
13	0.4	1.0	1.7	1.4	0.7	0.2	1.4	1.7	0.4	1.7	10
14	0.2	0.5	1.8	1.6	0.5	0.1	2.1	2.2	0.4	2.0	10
15											0
16											0
17											0
18											0
19											0
20	0.1	1.6	1.7	1.4	0.9	0.3	1.9	2.0	1.3	1.8	10
21											0
22											0
23											0
24											0
25											0
26									1.6	1.8	2
27	0.9	1.3	1.2	1.7	0.7	0.2	1.3	1.8	1.4	0.8	10
28	0.8	0.5	1.4	1.5	0.8	0.2	1.8	1.8	1.5	1.8	10
29	0.9	1.7	1.6	1.7	1.0	0.1	2.0	1.9	0.9	2.0	10
30											0
31											0

Distribution Sample Summary

Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary

Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary

Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.15

Distribution
System MonitoringCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										Number of Samples
	1	2	3	4	5	6	7	8	CS	WS	
1	0.8	0.2	1.5	1.8	0.9	0.3	0.3		1.7	1.5	9
2											0
3											0
4											0
5											0
6	0.9	0.9	1.4	2.3	1.0	0.2	1.6	2.1	2.2	2.1	10
7	0.8	0.9	1.9	1.8	1.0	0.2	1.3	2.2	1.0	2.0	10
8	1.0	0.5	1.2	1.5	1.1	0.3	1.6	2.0	1.0	2.0	10
9											0
10											0
11											0
12											0
13	0.7	1.5	2.0	1.7	0.9	0.2	1.7	2.3	0.6	2.1	10
14	0.4	1.8	2.1	1.8	0.8	0.3	2.4	2.5	0.5	2.3	10
15											0
16											0
17											0
18											0
19											0
20	0.3	1.9	2.0	1.6	1.2	0.6	2.2	2.3	1.5	2.2	10
21											0
22											0
23											0
24											0
25											0
26									1.9	2.2	2
27	1.3	1.9	1.7	2.1	0.9	0.4	1.7	2.0	1.8	1.0	10
28	1.2	0.8	1.7	1.8	1.2	0.4	2.1	2.3	1.9	2.2	10
29	1.2	2.0	1.9	1.9	1.3	0.2	2.3	2.3	1.1	2.3	10
30											0
31											0

Distribution Disinfectant Total Residual Summary

Percent samples with a detectable disinfectant residual 100%

Average disinfectant residual this month 1.4

Positive Distribution Samples

[illegible]


NSF International

 789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
 1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

TEST REPORT

Send To: C0211289

 Mr. Michael Glasgow
 City of Flint, Municipality
 1101 South Saginaw Street
 Flint, MI 48502

Facility: C0211290

 City of Flint Water Plant
 4500 North Dort Highway
 Flint MI 48505
 United States

Result	COMPLETE	Report Date	30-JAN-2015
Customer Name	City of Flint, Municipality		
Tested To	USFDA CFR Title 21 Part 165.110		
Description	Municipal Water		
Test Type	Test Only		
Job Number	J-00168001		
Project Number	10005233 (CL01)		
Project Manager	Anna Ciechanowski		

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization

Kerri A. De Vanseler
 Kerri Levanseler - Director, Chemistry Laboratory

Date 30-JAN-2015

**General Information**

Standard: USFDA CFR Title 21 Part 165.110
Date and Time Sampled: 1/26/2015 09:40 EST
Product Description: Municipal Water

Sample Id: S-0001121489
Description: Municipal Water - 1/26/2015 09:40 EST
Sampled Date: 01/26/2015
Received Date: 01/27/2015

Testing Parameter	Reporting Limit	Result	FDA SOQ	Units	P / F
Disinfection Residuals/Disinfection By-Products					
Bromate	10	19	10	ug/L	Fail



<<Additional Information>>

Sample Id: S-0001121489

Test Parameter	Date Analyzed	Time Analyzed	Date Prepared/ Processed
Disinfection Residuals/Disinfection By-Products			
Bromate (Ref: EPA 300.1)	28-JAN-2015		


Testing Laboratories:

	Flag	Id	Address
All work performed at: (Unless otherwise specified)	→	NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C3015	Bromate (Ref: EPA 300.1)

Certifications:

Arizona (# AZ0655)	California (# 03214 CA)	Connecticut (# PH-0625)
Florida (# E-87752 FL)	Hawaii	Indiana
Maryland (# 201)	Michigan (# 0048)	North Carolina (# 26701)
New Jersey (# MI770)	Nevada (# MI000302010A)	New York (# 11206)
Pennsylvania (# 68-00312)	South Carolina (# 81005)	Virginia (# 00045)
Vermont (# VT 11206)		

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

The reported result for Odor, Phenolics, Potassium, Specific Conductance and Total Residual Chlorine cannot be used for compliance purposes within the State of Arizona.

Notes:

- 1) Bottled water sold in the United States shall not contain Fluoride in excess of the levels published by the USFDA in 21 CFR Part 165.110. These levels are based on the annual average of maximum daily air temperatures at the location where the bottled water is sold at retail. Please refer to the most current edition of the regulation to determine the Fluoride maximum level that pertains to your product.
- 2) A blank on the FDA SOQ column indicates that no maximum level has been established by the FDA for that contaminant.
- 3) An ND result means that the contaminant was not detected at or above the reporting limit.

For a list of NSF International Method Detection Limits refer to
http://www.nsf.org/media/eneews/documents/minimum_detection_level_spreadsheet.pdf.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ) on behalf of DEQ-DWMA-Lansing
Sent: Friday, April 10, 2015 12:03 PM
To: Busch, Stephen (DEQ)
Subject: FW: January 2015 MOR
Attachments: January 2015 MOR scan.pdf; January 2015 Bromate Results.pdf

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Tuesday, February 10, 2015 3:56 PM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: January 2015 MOR

Mike & Adam,

Here is copy of the MOR for the month of January. Brent will be sending out a hard copy in the mail today. I have also included the January monthly bromate test results.

Mike Glasgow
City of Flint Water Plant

CITY of FLINT WATER TREATMENT PLANT MONTHLY OPERATION REPORT

SUPPLY NAME: CITY of FLINT WATER PLANT

WSSN: 2310

Michael Glasgow

Operator-in-Charge

January 2015

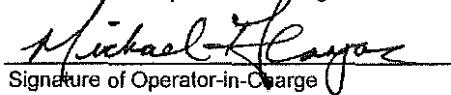
Month/Year

F-1R, F-2

Certification of Operator-in-Charge

F-1

Water Plant Classification



Signature of Operator-in-Charge

Genesee

County

Treatment Rate and Filter Data

Maximum Treatment Rate:	<u>19.3</u>	Million Gallons per Day
Rated Plant Capacity:	<u>36</u>	Million Gallons per Day
Average Filter Run:	<u>76</u>	Hours
Average Head Loss:	<u>n/a</u>	Feet *(filter head loss meters not operational)
Average Filtration Rate:	<u>2.1</u>	Gallons Per Square Feet per Minute
Maximum Filtration Rate:	<u>3.6</u>	Gallons Per Square Feet per Minute
Average Wash Water Use:	<u>3.2%</u>	Percent of Treated Water

Chemical Data

Chlorine on hand:	<u>12,000</u>	lb.	Est. supply:	<u>18</u>	days
Primary Coagulant (Ferric Chloride) on hand:	<u>110,000</u>	lb.	Est. supply:	<u>10</u>	days
Line (CaO) on hand:	<u>257</u>	tons	Est. supply:	<u>22</u>	days
Fluoride on Hand:	<u>16,630</u>	lb.	Est. supply:	<u>42</u>	days
Cost of All Chemicals per Million Gallons:	<u>n/a</u>	dollars			
Total Power Cost per Million Gallons:	<u>n/a</u>	dollars			

Remarks

Confluence Point # 1 (N)

Confluence Point # 2 (S)

Number of filter confluence samples > 0.3 NTU:

00

Number of filter confluence samples collected:

244242

Percent of filter confluence samples > 0.3 NTU:

0.0%0.0%

Number of filter confluence samples > 1 NTU

00

Did any individual filter exceed:

1.0 NTU in two consecutive measurements taken 15 minutes apart?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

0.5 NTU in two consecutive measurements taken 15 minutes apart after 4 hours of operation?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

1.0 NTU in two consecutive measurements taken 15 minutes apart for 3 consecutive months?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

2.0 NTU in two consecutive measurements taken 15 minutes apart for 2 consecutive months?

NO

If yes, attach specific filter(s) information and indicate required follow-up status.

Was continuous (every 15 minutes) filter monitoring equipment off-line during the month?

NO

If yes, indicate date(s), duration, and individual filter grab sampling frequency on a separate sheet.

Did POE disinfectant residual fall below 0.2 ppm during the month?

NO

If yes, indicate date(s) and duration on a separate sheet.

Was minimum C*T credit achieved for the entire month?

YES

If no, indicate on a separate sheet the date(s) not achieved.

Was continuous POE chlorine residual monitoring equipment off-line during the month?

NO

If yes, indicate date(s) and duration on a separate sheet.

WSSN: 2310

[illegible]

Filter turbidity

City of Flint Water Treatment Plant
WSSN: 2310

January 2015 Page 3

Date	Turbidity, Units												
	Confluence Point. No.1 (N) North						Confluence Point. No.2 (S) South						Point of Entry
	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Number of Samples	Avg.	Max	No. of 4 Hr. Compliance periods	No. of 4 Hr. Compliance periods >0.3 NTU	No. of Samples >0.3 NTU	Plant Tap NTU
1	8	0.07	0.08	6	0	0	8	0.06	0.09	6	0	0	0.08
2	7	0.07	0.09	6	0	0	7	0.06	0.07	6	0	0	0.07
3	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.08
4	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
5	8	0.06	0.09	6	0	0	8	0.08	0.09	6	0	0	0.07
6	8	0.08	0.09	6	0	0	8	0.07	0.10	6	0	0	0.07
7	8	0.09	0.15	6	0	0	8	0.07	0.09	6	0	0	0.08
8	8	0.08	0.10	6	0	0	8	0.07	0.11	6	0	0	0.08
9	8	0.06	0.08	6	0	0	8	0.06	0.07	6	0	0	0.07
10	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
11	8	0.06	0.08	6	0	0	8	0.07	0.09	6	0	0	0.07
12	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
13	8	0.06	0.12	6	0	0	8	0.05	0.07	6	0	0	0.06
14	8	0.07	0.09	6	0	0	8	0.06	0.09	6	0	0	0.07
15	8	0.08	0.09	6	0	0	8	0.07	0.09	6	0	0	0.07
16	8	0.07	0.09	6	0	0	8	0.07	0.10	6	0	0	0.09
17	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.07
18	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.07
19	8	0.07	0.09	6	0	0	8	0.07	0.11	6	0	0	0.07
20	8	0.07	0.08	6	0	0	8	0.07	0.10	6	0	0	0.11
21	8	0.08	0.11	6	0	0	8	0.07	0.08	6	0	0	0.09
22	8	0.09	0.11	6	0	0	8	0.08	0.09	6	0	0	0.09
23	7	0.08	0.10	6	0	0	7	0.07	0.09	6	0	0	0.08
24	8	0.07	0.09	6	0	0	8	0.06	0.10	6	0	0	0.07
25	8	0.06	0.07	6	0	0	8	0.07	0.09	6	0	0	0.07
26	8	0.07	0.09	6	0	0	6	0.08	0.10	6	0	0	0.07
27	7	0.08	0.11	6	0	0	7	0.07	0.10	6	0	0	0.08
28	7	0.07	0.09	6	0	0	7	0.07	0.10	6	0	0	0.07
29	7	0.07	0.10	6	0	0	7	0.07	0.08	6	0	0	0.07
30	8	0.07	0.09	6	0	0	8	0.07	0.08	6	0	0	0.08
31	8	0.06	0.10	6	0	0	8	0.06	0.08	6	0	0	0.07
Avg.	8	0.07	0.09	6	0	0	8	0.07	0.09	6	0	0	
Max.	8	0.09	0.15	6	0	0	8	0.08	0.11	6	0	0	0.11
Min.	7	0.06	0.07	6	0	0	6	0.05	0.07	6	0	0	

Fluoridation &
ChlorinationCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	Fluoride Applied as F- mg/L	Fluoride Analysis (mg/L)			Chlorine Application (mg/L)			Chlorine Residual (mg/L)					
					Intermediate Chlorine	Post Chlorine	Total Chlorine	Filtered		3 MG Well		Tap	
		Raw	Tap	Dist.				Free	Total	Free	Total	Free	Total
1	0.4	0.24	0.70		1.3	3.5	4.8	0.6	0.9	2.7	3.0	2.1	2.4
2	0.4	0.21	0.62		1.4	3.5	4.9	0.6	0.8	2.6	3.1	2.2	2.6
3	0.3	0.22	0.55		1.8	2.6	4.4	0.5	0.7	2.7	3.3	2.8	3.2
4	0.4	0.20	0.60		1.8	2.5	4.3	0.8	1.0	2.8	3.0	2.9	3.2
5	0.4	0.19	0.23		1.9	2.5	4.4	0.7	1.0	2.8	3.0	2.7	3.0
6	0.3	0.19	0.49	0.39	1.9	2.7	4.6	0.6	0.9	2.7	3.2	2.5	3.2
7	0.3	0.23	0.61		1.9	2.6	4.5	0.7	0.9	2.7	3.0	2.2	2.7
8	0.3	0.19	0.51		1.9	2.6	4.5	0.6	0.9	2.4	3.1	2.1	2.6
9	0.0	0.19	0.51		2.0	3.2	5.2	0.4	0.7	2.8	3.1	2.3	2.8
10	0.0	0.22	0.44		1.8	3.1	4.9	0.4	0.4	2.4	2.9	1.8	2.3
11	0.0	0.20	0.22		1.8	3.0	4.8	0.8	1.1	2.7	3.1	2.5	2.9
12	0.0	0.21	0.21		1.6	3.2	4.8	0.5	0.8	2.8	3.1	2.4	2.8
13	0.0	0.19	0.19	0.35	1.7	3.1	4.8	0.8	1.2	2.8	3.1	2.2	2.6
14	0.0	0.21	0.21		1.6	3.0	4.6	0.4	0.6	2.8	3.1	2.3	2.8
15	0.0	0.22	0.24		1.6	3.0	4.6	0.5	0.9	2.7	3.1	2.0	2.3
16	0.1	0.20	0.20		1.6	3.0	4.6	0.5	0.9	2.3	3.0	2.0	2.5
17	0.3	0.22	0.23		1.7	3.0	4.7	0.4	0.6	2.5	3.0	1.8	2.3
18	0.4	0.19	0.55		1.8	3.2	5.0	0.5	0.8	2.7	3.0	2.5	2.9
19	0.4	0.20	0.64		1.9	3.2	5.1	0.4	0.6	2.8	3.2	2.2	2.6
20	0.0	0.22	0.45	0.31	2.0	3.0	5.0	0.5	0.9	2.9	3.4	2.1	2.7
21	0.2	0.21	0.31		1.9	2.8	4.7	0.5	0.8	2.6	3.0	2.2	2.5
22	0.4	0.20	0.67		1.9	2.9	4.8	0.4	0.7	2.8	3.2	1.9	2.2
23	0.4	0.22	0.41		2.0	3.1	5.1	0.4	0.8	2.6	3.0	1.5	1.8
24	0.4	0.21	0.67		2.0	3.2	5.2	0.7	0.9	2.8	3.0	2.7	3.0
25	0.4	0.23	0.59		2.1	3.1	5.2	0.5	0.8	2.9	3.4	2.4	2.7
26	0.4	0.21	0.57		2.0	3.0	5.0	0.4	0.7	2.7	3.1	2.4	2.7
27	0.4	0.23	0.54	0.55	2.1	3.1	5.2	0.4	0.6	2.7	3.0	2.2	2.5
28	0.4	0.22	0.59		2.0	2.9	4.9	0.8	1.0	2.4	2.7	1.9	2.3
29	0.4	0.25	0.62		2.0	2.9	4.9	0.7	0.9	2.8	3.2	2.2	2.5
30	0.4	0.22	0.63		2.0	3.0	5.0	0.7	0.8	2.5	2.9	2.0	2.5
31	0.3	0.19	0.52		1.9	3.0	4.9	0.6	0.8	2.8	3.2	2.8	3.2
Avg.	0.26	0.21	0.47	0.40	1.8	3.0	4.8	0.6	0.8	2.7	3.1	2.3	2.7
Max.	0.40	0.25	0.70	0.55	2.1	3.5	5.2	0.8	1.2	2.9	3.4	2.9	3.2
Min.	0.00	0.19	0.19	0.31	1.3	2.5	4.3	0.4	0.4	2.3	2.7	1.5	1.8

Chemical
AnalysesCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

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Date	pH (S.U.)		Total Hardness as CaCO ₃ (mg/L)		Total Alkalinity as CaCO ₃ (mg/L)		Non-Carbonate Hardness as CaCO ₃ (mg/L)		Calcium as Ca ²⁺ (mg/L)		Magnesium as Mg ²⁺ (mg/L)		Chloride as Cl ⁻ (mg/L)	
	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap	Raw	Tap
1	8.23	7.65	323	185	264	65	59	120	108.2	55.3	13.6	11.7	47	85
2	7.84	7.31	324	193	258	76	66	117	121.0	65.7	6.3	4.9	47	87
3	7.77	7.38	323	212	257	98	66	114	120.0	77.0	5.8	4.9	48	87
4	8.15	7.86	325	218	261	96	64	122	105.8	64.9	14.6	13.1	48	88
5	8.31	7.80	318	206	262	84	56	112	103.4	80.9	14.6	13.6	45	78
6	8.09	7.97	320	208	256	95	64	113	121.0	69.7	4.9	8.7	48	85
7	8.04	7.91	313	194	256	97	57	97	101.8	61.7	15.6	10.7	43	82
8	8.19	8.04	313	202	251	87	62	115	121.0	72.9	2.9	3.9	48	83
9	8.08	7.96	311	205	248	93	63	112	115.4	70.5	5.8	6.3	47	84
10	7.98	7.75	316	181	255	73	61	108	114.6	64.1	6.8	3.4	47	88
11	8.01	8.24	321	174	256	63	65	111	100.2	44.9	17.5	14.6	44	80
12	8.09	7.68	318	177	250	57	68	120	101.0	46.5	16.0	14.6	49	81
13	7.94	7.69	320	165	245	46	75	119	105.8	44.1	14.1	13.1	47	87
14	7.80	7.52	321	172	252	68	69	114	115.4	56.9	7.8	6.8	48	88
15	7.96	7.64	323	173	258	48	65	125	105.8	48.9	14.1	13.1	45	91
16	7.94	7.47	324	172	257	44	67	128	117.8	58.5	6.8	6.8	47	88
17	7.82	7.95	320	174	252	64	68	120	119.4	58.5	4.9	5.3	46	89
18	8.02	7.72	322	185	250	69	64	116	104.2	55.3	15.1	11.2	48	83
19	8.03	7.62	321	184	255	59	66	125	102.6	54.5	16.0	11.7	48	86
20	7.89	7.59	321	184	255	87	66	117	116.2	64.9	7.8	4.9	49	91
21	7.86	7.79	324	183	257	72	67	111	105.0	51.3	15.1	13.1	50	83
22	7.59	7.42	325	193	262	81	63	112	116.2	68.9	8.3	4.9	49	84
23	7.70	7.44	344	186	256	78	88	108	112.2	59.3	15.6	9.2	52	87
24	7.91	7.51	327	187	259	72	68	115	101.0	48.1	18.5	16.0	48	85
25	7.93	7.71	326	188	260	75	68	113	100.2	50.5	18.5	14.6	47	85
26	7.95	7.82	328	194	259	71	69	123	105.8	54.5	15.6	13.6	51	88
27	7.77	7.99	332	191	266	68	66	123	111.4	60.1	13.1	9.2	51	89
28	7.99	7.98	334	186	264	76	70	112	107.4	51.3	16.0	14.6	48	85
29	7.80	7.83	334	196	268	76	66	120	106.6	57.7	16.5	12.6	55	86
30	7.84	7.78	331	193	272	78	59	115	113.0	59.3	13.1	10.7	55	90
31	7.96	7.91	335	197	267	69	68	128	108.2	56.1	15.6	13.6	51	92
Avg.	7.95	7.74	324	189	258	73	66	116	109.9	58.5	12.2	10.2	48	86
Max.	8.31	8.24	344	218	272	98	88	128	121.0	77	18.5	16.0	55	92
Min.	7.59	7.31	311	165	245	44	58	97	100.2	44.1	2.9	3.4	43	78

Bacteriological &
Physical ParametersCity of Flint Water Treatment Plant
WSSN: 2310

January 2015

Page 6

Date	Total Coliform						Standard Plate Count (Simplate MPN)		Conductivity (mS)	Temp. C	Color		Odor	
	Raw (Colliert MPN)		Filter Confluence (N&S)		Plant Tap									
	# Samples	Count	# Samples	# pos	# Samples	# pos	Raw	Tap	Tap	Raw	Raw	Tap	Raw	Tap
1	1	2592	12	0	1	0	800	< 2	0.37	5.6				
2	1	1684	12	0	1	0	600	< 2	0.38	4.5				
3	1	980	12	0	1	0	2400	< 2	0.42	4.0				
4	1	718	12	0	1	0	200	< 2	0.44	3.8				
5	1	1732	12	0	1	0	5980	< 2	0.41	3.0				
6	1	874	12	0	1	0	200	< 2	0.41	4.5				
7	1	2086	12	0	1	0	200	< 2	0.39	4.2				
8	1	960	12	0	1	0	120	< 2	0.39	5.5				
9	1	1146	12	0	1	0	420	< 2	0.40	2.6				
10	1	2994	12	0	1	0	760	38	0.31	2.6				
11	1	978	12	0	1	0	520	10	0.36	2.1				
12	1	1042	12	0	1	0	600	< 2	0.36	1.9				
13	1	862	12	0	1	0	340	< 2	0.37	1.4				
14	1	646	12	0	1	0	200	< 2	0.36	1.9				
15	1	738	12	0	1	0	300	< 2	0.36	3.5				
16	1	2224	12	0	1	0	200	< 2	0.37	1.9				
17	1	320	12	0	1	0	200	< 2	0.36	4.9				
18	1	40	12	0	1	0	200	2	0.38	4.9				
19	1	148	12	0	1	0	120	< 2	0.40	5.2				
20	1	770	12	0	1	0	146	< 2	0.38	4.9				
21	1	148	12	0	1	0	80	< 2	0.37	5.9				
22	1	201	12	0	1	0	190	< 2	0.39	5.8				
23	1	345	12	0	1	0	120	< 2		4.9				
24	1	97	12	0	1	0	150	< 2	0.38	6.4				
25	1	146	12	0	1	0	80	< 2	0.39	4.4				
26	1	181	12	0	1	0	230	< 2	0.40	3.8				
27	1	146	12	0	1	0	120	< 2	0.38	4.9				
28	1	172	12	0	1	0	128	< 2	0.38	4.3				
29	1	261	12	0	1	0	137	< 2	0.49	4.2				
30	1	155	12	0	1	0	93	< 2	0.43	4.0				
31	1	41	12	0	1	0	60	< 2	0.53	4.0				

Avg.									0.39	4.0				
Max.							5980	38	0.53	6.4				
Min.									0.31	1.4				

**Distribution System
Monitoring**
**City of Flint Water Treatment Plant
WSSN: 2310**

January 2015

Page 7

Date	Free Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.7	0.1	1.3	1.6	0.7	0.2	0.2		1.5	1.4	9
2											0
3											0
4											0
5											0
6	0.6	0.7	1.5	2.0	0.8	0.1	1.4	1.8	1.8	1.6	10
7	0.6	0.7	1.7	1.5	0.7	0.2	1.1	2.0	0.8	1.7	10
8	0.8	0.3	1.0	1.3	0.8	0.1	1.4	1.8	0.8	1.7	10
9											0
10											0
11											0
12											0
13	0.4	1.0	1.7	1.4	0.7	0.2	1.4	1.7	0.4	1.7	10
14	0.2	0.5	1.8	1.6	0.5	0.1	2.1	2.2	0.4	2.0	10
15											0
16											0
17											0
18											0
19											0
20	0.1	1.6	1.7	1.4	0.9	0.3	1.9	2.0	1.3	1.8	10
21											0
22											0
23											0
24											0
25											0
26									1.6	1.8	2
27	0.9	1.3	1.2	1.7	0.7	0.2	1.3	1.8	1.4	0.8	10
28	0.8	0.5	1.4	1.5	0.8	0.2	1.8	1.8	1.5	1.8	10
29	0.9	1.7	1.6	1.7	1.0	0.1	2.0	1.9	0.9	2.0	10
30											0
31											0

Distribution Sample Summary

Total # of routine distribution samples analyzed	101
Total # of routine distribution samples required	100

Distribution Bacteriological Summary

Total # of positive routine distribution samples	0
Percent of routine distribution samples positive	0%

See page 9 for positive sample information.

Distribution Disinfectant Total Residual Summary

Percentage of samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.15

Date	Total Chlorine Residual at Bacteriological Monitoring Stations mg/l										
	1	2	3	4	5	6	7	8	CS	WS	Number of Samples
1	0.8	0.2	1.5	1.8	0.9	0.3	0.3		1.7	1.5	9
2											0
3											0
4											0
5											0
6	0.9	0.9	1.4	2.3	1.0	0.2	1.6	2.1	2.2	2.1	10
7	0.8	0.9	1.9	1.8	1.0	0.2	1.3	2.2	1.0	2.0	10
8	1.0	0.5	1.2	1.5	1.1	0.3	1.6	2.0	1.0	2.0	10
9											0
10											0
11											0
12											0
13	0.7	1.5	2.0	1.7	0.9	0.2	1.7	2.3	0.6	2.1	10
14	0.4	1.8	2.1	1.8	0.8	0.3	2.4	2.5	0.5	2.3	10
15											0
16											0
17											0
18											0
19											0
20	0.3	1.9	2.0	1.6	1.2	0.6	2.2	2.3	1.5	2.2	10
21											0
22											0
23											0
24											0
25											0
26									1.9	2.2	2
27	1.3	1.9	1.7	2.1	0.9	0.4	1.7	2.0	1.8	1.0	10
28	1.2	0.8	1.7	1.8	1.2	0.4	2.1	2.3	1.9	2.2	10
29	1.2	2.0	1.9	1.9	1.3	0.2	2.3	2.3	1.1	2.3	10
30											0
31											0

Distribution Disinfectant Total Residual Summary	
Percent samples with a detectable disinfectant residual	100%
Average disinfectant residual this month	1.4

Positive Distribution Samples

[illegible]

**NSF International**

789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

TEST REPORT

Send To: C0211289

Mr. Michael Glasgow
City of Flint, Municipality
1101 South Saginaw Street
Flint, MI 48502

Facility: C0211290

City of Flint Water Plant
4500 North Dort Highway
Flint MI 48505
United States

Result	COMPLETE	Report Date	30-JAN-2015
Customer Name	City of Flint, Municipality		
Tested To	USFDA CFR Title 21 Part 165.110		
Description	Municipal Water		
Test Type	Test Only		
Job Number	J-00168001		
Project Number	10005233 (CL01)		
Project Manager	Anna Ciechanowski		

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization Kerri Levanseler
Kerri Levanseler - Director, Chemistry Laboratory

Date 30-JAN-2015

**General Information**

Standard: USFDA CFR Title 21 Part 165.110

Date and Time Sampled: 1/26/2015 09:40 EST

Product Description: Municipal Water

Sample Id: S-0001121489

Description: Municipal Water - 1/26/2015 09:40 EST

Sampled Date: 01/26/2015

Received Date: 01/27/2015

Testing Parameter	Reporting Limit	Result	FDA SOQ	Units	P / F
Disinfection Residuals/Disinfection By-Products					
Bromate	10	19	10	ug/L	Fail



<<Additional Information>>

Sample Id: S-0001121489

Test Parameter	Date Analyzed	Time Analyzed	Date Prepared/ Processed
Disinfection Residuals/Disinfection By-Products			
Bromate (Ref: EPA 300.1)	28-JAN-2015		


Testing Laboratories:

	Flag	Id	Address
All work performed at: (Unless otherwise specified)		NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C3015	Bromate (Ref: EPA 300.1)

Certifications:

Arizona (# AZ0655)	California (# 03214 CA)	Connecticut (# PH-0625)
Florida (# E-87752 FL)	Hawaii	Indiana
Maryland (# 201)	Michigan (# 0048)	North Carolina (# 26701)
New Jersey (# MI770)	Nevada (# MI000302010A)	New York (# 11206)
Pennsylvania (# 68-00312)	South Carolina (# 81005)	Virginia (# 00045)
Vermont (# VT 11206)		

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

The reported result for Odor, Phenolics, Potassium, Specific Conductance and Total Residual Chlorine cannot be used for compliance purposes within the State of Arizona.

Notes:

- 1) Bottled water sold in the United States shall not contain Fluoride in excess of the levels published by the USFDA in 21 CFR Part 165.110. These levels are based on the annual average of maximum daily air temperatures at the location where the bottled water is sold at retail. Please refer to the most current edition of the regulation to determine the Fluoride maximum level that pertains to your product.
- 2) A blank on the FDA SOQ column indicates that no maximum level has been established by the FDA for that contaminant.
- 3) An ND result means that the contaminant was not detected at or above the reporting limit.

For a list of NSF International Method Detection Limits refer to
http://www.nsf.org/media/enews/documents/minimum_detection_level_spreadsheet.pdf.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 12:59 PM
To: Busch, Stephen (DEQ)
Subject: RE: SDWA Violations - Flint

thanks

From: Busch, Stephen (DEQ)
Sent: Tuesday, March 17, 2015 12:21 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: SDWA Violations - Flint
Importance: High

As I indicated the info you provided was transmitted to the Governor's office. Excellent work in a short time frame. Well done!

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Thelen, Mary Beth (DEQ)
Sent: Tuesday, March 17, 2015 11:39 AM
To: Hollins, Harvey (GOV); Clayton, Stacie (GOV)
Cc: Wyant, Dan (DEQ); Wurfel, Brad (DEQ); Sygo, Jim (DEQ); Thelen, Mary Beth (DEQ)
Subject: SDWA Violations - Flint
Importance: High

Dear Harvey,

Director Dan Wyant asked that I send you the following information regarding Flint.

As requested, the following information has been gleaned from our database regarding violations:

In calendar years 2013 and 2014, we've identified 1100 violations (200 are standards violations, i.e., MCLs; and 910 other violations).

This represents 326 community water supplies that had violations over these two years.

Flint has 5 violations in those 2 years (TTHM MCLs at 2 sites and 2 bacti MCLs (1 with E. coli that counts as an additional violation)).

Please let us know if you need anything further. Thank you.

Mary Beth

Mary Beth Thelen
 Management Assistant to Director Dan Wyant

Department of Environmental Quality
Constitution Hall, 6th Floor South
Phone: 517-284-6712 or 284-6700 (new numbers)
Fax: 517-241-7401
Thelem2@michigan.gov

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 11:52 AM
To: Ostrander, Debbie (DEQ)
Subject: RE: SDWA Violations

guess it was my deal anyway with Flint involved.

From: Ostrander, Debbie (DEQ)
Sent: Tuesday, March 17, 2015 11:15 AM
To: Rosenthal, Adam (DEQ)
Subject: RE: SDWA Violations

Thanks for handling it.

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 11:13 AM
To: Ostrander, Debbie (DEQ)
Subject: RE: SDWA Violations

yes and the query behind the scene, that's why the ?

I did lop off a few from 2015 since it was a start date, not a range. but not that many.

From: Ostrander, Debbie (DEQ)
Sent: Tuesday, March 17, 2015 11:09 AM
To: Rosenthal, Adam (DEQ)
Subject: RE: SDWA Violations

Yes. I didn't spend any time looking at what the violations were for, since you were already responding to Richard. I generated it from one of the queries in SDWIS standard reports. Were you working off of the report Kris has created?

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 11:05 AM
To: Ostrander, Debbie (DEQ)
Subject: RE: SDWA Violations

Looks like the total is more than what I came up with? I think the goal is to show whoever is asking that Flint is just a blip in comparison.

From: Ostrander, Debbie (DEQ)
Sent: Tuesday, March 17, 2015 11:01 AM
To: Rosenthal, Adam (DEQ)
Subject: RE: SDWA Violations

Here's what I finally came up with.

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 10:25 AM
To: Benzie, Richard (DEQ); Ostrander, Debbie (DEQ)

Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)

Subject: RE: SDWA Violations

For the majority yes, an E.coli MCL counts as 2. I will work on your other questions.

Adam

From: Benzie, Richard (DEQ)

Sent: Tuesday, March 17, 2015 10:22 AM

To: Rosenthal, Adam (DEQ); Ostrander, Debbie (DEQ)

Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)

Subject: Re: SDWA Violations

Do I understand that the multiple violations are probably all monitoring violations? If so, I won't worry about lumping them together.

Is there a way to separate out the number of systems that had these 1200 violations?

At the very least we need to be able to show how Flint fits in - what are there numbers over those two years?

Sent using OWA for iPhone

From: Rosenthal, Adam (DEQ)

Sent: Tuesday, March 17, 2015 10:12:37 AM

To: Benzie, Richard (DEQ); Ostrander, Debbie (DEQ)

Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ)

Subject: RE: SDWA Violations

So far it shows 1110 violations for calendar '13 & '14. 200 are MCL, which leaves 910 other violations. However, there are many violations we would count as 1 that SDWIS counts as more, ie. a system fails to collect DBP – that is 2 or more violations. A VOC MV counts as 20 violations in SDWIS, etc.

What would you like to do?

Adam

From: Benzie, Richard (DEQ)

Sent: Monday, March 16, 2015 4:13 PM

To: Rosenthal, Adam (DEQ); Ostrander, Debbie (DEQ)

Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ)

Subject: RE: SDWA Violations

Calendar. Thanks. I think they want it to show someone that Flint is not alone in having violations.

From: Rosenthal, Adam (DEQ)

Sent: Monday, March 16, 2015 4:12 PM

To: Benzie, Richard (DEQ); Ostrander, Debbie (DEQ)

Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ)

Subject: RE: SDWA Violations

I can take a look, calendar or fiscal?

Adam

From: Benzie, Richard (DEQ)
Sent: Monday, March 16, 2015 4:05 PM
To: Ostrander, Debbie (DEQ); Rosenthal, Adam (DEQ)
Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ)
Subject: SDWA Violations

I need someone to provide a list or summary of the violations that have occurred in 2013 and 2014. Kris is out until Thursday, maybe Friday and Jean is still out for a few weeks. It may be as simple as running a standard report, but it's easier for me to ask you than to figure that out right now.

I thought of you two, as the SDWIS back-up (Deb) and someone Kris tells me is more savvy in manipulating databases than one may realize (Adam). Could either of you provide some sort of report on the statewide violations for the past 2 calendar years? The request from upstairs wants all violations, but I think it would be beneficial to at least say what portion are monitoring violations and what portion are MCL and other violations.

Let me know if you can or cannot meet this request.

Thanks,
Richard

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 11:14 AM
To: Benzie, Richard (DEQ); Ostrander, Debbie (DEQ)
Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: SDWA Violations

You're welcome.

Adam

From: Benzie, Richard (DEQ)
Sent: Tuesday, March 17, 2015 11:11 AM
To: Rosenthal, Adam (DEQ); Ostrander, Debbie (DEQ)
Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: Re: SDWA Violations

Thank you for the excellent customer service. I really appreciate your efforts and willingness to drop what you were working on to answer this question from department management.

Richard

Sent using OWA for iPhone

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 17, 2015 10:58:07 AM
To: Benzie, Richard (DEQ); Ostrander, Debbie (DEQ)
Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: SDWA Violations

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Flint has 5 violations in those 2 yrs - TTHM MCLs at 2 sites & 2 bacti MCLs (1 with e.coli that counts as 2)

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To: Rosenthal, Adam (DEQ)
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Cc: Lachance, Amy (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: SDWA Violations

326 supplies with violations in '13 & '14

Flint has 5 violations in those 2 yrs - TTHM MCLs at 2 sites & 2 bacti MCLs (1 with e.coli that counts as 2)

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Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, March 10, 2015 9:53 AM
To: Michael Glasgow
Subject: RE: City of Flint Water Plant Monitoring Results

Got it, thanks Mike.

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Tuesday, March 10, 2015 9:51 AM
To: Rosenthal, Adam (DEQ)
Subject: City of Flint Water Plant Monitoring Results

Adam,

Good morning, here are the results of our February monthly bromate monitoring, and our first quarter radiological testing.

Mike Glasgow
City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 27, 2015 1:44 PM
To: Busch, Stephen (DEQ)
Subject: Flint DBP MCL 1Q15
Attachments: Flint DBP MCL 1Q15.doc



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

March 2, 2015

Mr. Brent Wright, Operation Supervisor
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, MI 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice – Maximum Contaminant Level for Total Trihalomethanes
Operational Evaluation – Total Trihalomethanes
1st Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the City of Flint is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels (MCL) for disinfection byproducts*, of the 1979 Administrative Code.

In accordance with R.325.10610, *MCLs for disinfection byproducts*, of the 1979 Administrative Code, the MCL for disinfection byproduct total trihalomethanes (TTHM) is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City of Flint's highest TTHM locational running annual average (LRAA), based on the last four quarters, ending February 28, 2015, is 0.105 mg/l which exceeds the standard, and that two of the eight sample site locations exceed the standard of 0.080 mg/L.

Further, in accordance with R325.10719I, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, when an operational evaluation level (OEL) at a monitoring location for TTHM exceeds 0.080 mg/L, a supply shall conduct an operational evaluation and submit a written report of the evaluation to the department not later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. As listed in the table below, our records show that TTHM operational evaluation levels for the City of Flint exceed 0.080 mg/L at one of the City's eight sample site locations.

TTHM Results (mg/L)						
	5/21/14	8/21/14	11/20/14	2/17/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.162	0.145	0.059	0.0162	0.096	0.059
DBP2 Liquor Palace 3302 S. Dort Highway	0.112	0.127	0.033	0.0168	0.072	0.049
DBP3 North Flint Auto 6204 N. Saginaw St.	0.097	0.118	0.041	0.0149	0.068	0.047
DBP4 University Market 2501 Flushing Road	0.106	0.196	0.094	0.0245	0.105	0.085
DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.0151	0.078	0.063
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.088	0.144	0.054	0.0192	0.076	0.059
DBP7 Salem Housing 3216 MLK Boulevard	0.082	0.112	0.050	0.0285	0.068	0.055
DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.0199	0.061	0.047

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on March 1, 2015, and will continue until TTHM LRAA is below the MCL at all sample sites.

We acknowledge and appreciate the City's cooperation with our recommendation to preemptively conduct an Operational Evaluation following the City's second quarterly round of monitoring in August. That Operational Evaluation report has identified possible causes and corrective measures for the elevated TTHM levels which we encourage the City continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported in the most recent quarter, and suggest the City may be able to achieve compliance with the TTHM standard.

Our office is continuing to review the Operational Evaluation report that was submitted on December 1, 2014, and will provide the City and their consultant comments as needed to help address this MCL violation.

Water systems that exceed the OEL must complete and submit an Operational Evaluation in accordance with Administrative Rule 719I (R325.10719I) within 90 days of being notified of the violation. **An updated Operational Evaluation report, which incorporates the most recent sample results, must now be completed and received by our office by no later than May 31, 2015.**

If you have any other factual information you would like us to consider regarding the violation identified in this Violation Notice (VN), please provide them in a written response by March 15, 2015.

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery **and** by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN

which contains the minimum required language. The City is encouraged to include additional information regarding its response to this violation. **Please notify your consumers by April 1, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the public notice.** This violation must also be included in your 2015 Consumer Confidence Report (CCR), due by July 1, 2016. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-290-8817

Adam Rosenthal, EQA
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-284-6644

mfp/ar/jlr
Enclosure

cc: Mr. Darnell Early, Emergency Manager, City of Flint
Mr. Daughtry Johnson, City of Flint
Mr. Howard Croft, City of Flint
Mr. Robert Bincsik, City of Flint
Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Genesee County Health Department
Ms. Liane Shekter Smith, P.E., DEQ
Mr. Richard Benzie, P.E., DEQ
Mr. Stephen Busch, P.E., DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (May 21, August 21, November 20 of 2014 and February 17, 2015). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the Maximum Contaminant Level (MCL). The standard for TTHMs is 80 µg/L. The location reporting the highest TTHM level was 105 ug/L; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent sample results were all less than half the MCL, however since compliance is calculated using a locational running annual average (LRAA) of the most recent 4 quarters, we are still out of compliance with the MCL at 2 of 8 locations.

For more information, please contact Mr. Brent Wright at 517-787-6537 or the Flint Water Plant at 4500 North Dort Highway, Flint, MI 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 27, 2015 11:11 AM
To: Philip, Kris (DEQ)
Subject: RE: Flint

I can see that the LRAA is being still being calculated using the quarter before the plant went online in Apr 2014 – thought we fixed that?

From: Philip, Kris (DEQ)
Sent: Friday, February 27, 2015 11:07 AM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint

I'll take a look. if the earliest quarter that was dropped was low, then it can happen.

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 27, 2015 11:06 AM
To: Philip, Kris (DEQ)
Subject: RE: Flint

thanks. any idea why a LRAA would go up when the current sample is way lower?

From: Philip, Kris (DEQ)
Sent: Friday, February 27, 2015 10:52 AM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint

done

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 27, 2015 10:39 AM
To: Philip, Kris (DEQ)
Subject: Flint

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To: Busch, Stephen (DEQ)
Subject: Flint PbCu 90th 2014

Pb 90th = 6.0 ppb with 2 samples <AL (23 & 37 ppb)

Cu 90th = 110 ppb with 0 samples <AL

Leanne Walters @ 212 Browning Ave with an individual sample of 104 ppb for lead did not participate in this 1st 6 month round of monitoring.

Adam

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Monday, February 23, 2015 3:03 PM
To: Busch, Stephen (DEQ)
Subject: Flint 2014 source water data
Attachments: Flint 2014 Source Data.xlsx

couldn't find any raw water nitrate.

Flint Source Water Quality Data for 2014

		Turbidity	pH	Hardness	Alkalinity	TOC	Nitrate	
Jan	Ave							
	Max							
	Min							
Feb	Ave							
	Max							
	Min							
Mar	Ave							
	Max							
	Min							
Apr	Ave	11.6	8.38	246	200			Plant Start-
	Max	15.6	8.46	255	208			
	Min	10.2	8.31	230	190			
May	Ave	12.3	8.27	254	207	10.30		
	Max	71.7	8.44	286	216	10.30		
	Min	3.5	8.05	232	184	10.30		
Jun	Ave	4.6	8.10	268	223	9.00		
	Max	38.4	8.34	280	232	9.00		
	Min	1.9	7.88	252	216	9.00		
Jul	Ave	8.4	8.13	249	205	8.44		
	Max	49.5	8.51	273	226	8.44		
	Min	4.9	7.68	227	182	8.44		
Aug	Ave	6.2	8.09	235	194	8.48		
	Max	19.3	8.39	248	200	8.48		
	Min	4.7	7.59	221	185	8.48		
Sep	Ave	9.1	8.13	243	202	7.36		
	Max	73.4	8.41	251	209	7.36		
	Min	5.5	7.78	235	192	7.36		
Oct	Ave	9.2	8.25	261	214	7.38		
	Max	48.2	8.40	280	237	7.38		
	Min	5.7	7.97	249	202	7.38		
Nov	Ave	6.2	8.40	301	240	7.27		
	Max	36.3	8.57	321	255	7.27		
	Min	2.5	8.16	281	149	7.27		
Dec	Ave	5.0	8.24	317	258	6.49		
	Max	25.6	8.43	334	270	6.49		
	Min	1.6	7.99	289	232	6.49		
Totals	Ave	8.1	8.22	264	216	8.09	#DIV/0!	
	Max	73.4	8.57	334	270	10.30	0.000	
	Min	1.6	7.59	221	149	6.49	0.000	

up 4/25/14

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 06, 2015 11:48 AM
To: Philip, Kris (DEQ)
Subject: RE: flint violation

excellent.

From: Philip, Kris (DEQ)
Sent: Friday, February 06, 2015 11:15 AM
To: Rosenthal, Adam (DEQ)
Subject: flint violation

It totally worked! I re-ran CDS and (a) the query in 5DWIS Standard Reports now shows averages for all 8 sites, (b) they match what you had in the letter, and (c) it created the 2 candidate violations just like it should! Perhaps making that correction to the schedule made the difference.

I migrated the 2 violations from last quarter and entered the SIA/SIE as 12/12/14 (letter date). If you have a copy of the PN they sent, you should update the SIF date. Then we are set until then end of Feb.

Have a good weekend.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, February 06, 2015 10:25 AM
To: Philip, Kris (DEQ)
Subject: FW: Flint Disinfection By-Product data
Attachments: Flint 2014 DBP results.PDF

From: Rosenthal, Adam (DEQ)
Sent: Friday, January 16, 2015 1:31 PM
To: 'larry.f.elliott@abc12.com'
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: Flint Disinfection By-Product data

Dear Mr. Elliott at ABC 12 Flint.

Attached are results and definitions for Disinfection By-Products samples collected during 2014 for the City of Flint. The Locational Running Annual Average (LRAA) is the number used for compliance with the Maximum Contaminant Levels (MCLs).

Sincerely,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

Flint 2014 TTHM & HAA5 results and Locational Running Annual Average (LRAA)

1/16/15

TTHM Results (mg/L)				
	5/21/14	8/21/14	11/20/14	LRAA
DBP1 McDonalds 3719 Davison	0.162	0.145	0.059	0.092
DBP2 Liquor Palace 3302 S. Dort Highway	0.112	0.127	0.033	0.068
DBP3 North Flint Auto 6204 N. Saginaw St.	0.097	0.118	0.041	0.064
DBP4 University Market 2501 Flushing Road	0.106	0.196	0.094	0.099
DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.074
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.088	0.144	0.054	0.072
DBP7 Salem Housing 3216 MLK Boulevard	0.082	0.112	0.050	0.061
DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.056

HAA5 Results (mg/L)				
	5/21/14	8/21/14	11/20/14	LRAA
DBP1 McDonalds 3719 Davison	0.064	0.043	0.016	0.031
DBP2 Liquor Palace 3302 S. Dort Highway	0.052	0.031	0.015	0.025
DBP3 North Flint Auto 6204 N. Saginaw St.	0.048	0.037	0.018	0.026
DBP4 University Market 2501 Flushing Road	0.055	0.017	0.024	0.024
DBP5 Taco Bell 3606 Corunna Road	0.050	0.024	0.015	0.022
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.049	0.030	0.017	0.024
DBP7 Salem Housing 3216 MLK Boulevard	0.041	0.025	0.005	0.018
DBP8 BP Gas Station 822 S. Dort Highway	0.038	0.040	0.021	0.025

Locational running annual average (LRAA): the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Maximum contaminant level (MCL): the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

The Stage 2 Disinfection By-Products Rule (DBPR) requires systems to meet an LRAA of 0.080 mg/L for TTHM and 0.060 mg/L for HAA5 at each compliance monitoring location.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, January 16, 2015 1:31 PM
To: larry.f.elliott@abc12.com
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Wurfel, Brad (DEQ); Benzie, Richard (DEQ);
Shekter Smith, Liane (DEQ)
Subject: Flint Disinfection By-Product data
Attachments: Flint 2014 DBP results.PDF

Dear Mr. Elliott at ABC 12 Flint.

Attached are results and definitions for Disinfection By-Products samples collected during 2014 for the City of Flint. The Locational Running Annual Average (LRAA) is the number used for compliance with the Maximum Contaminant Levels (MCLs).

Sincerely,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

Flint 2014 TTHM & HAA5 results and Locational Running Annual Average (LRAA)

1/16/15

TTHM Results (mg/L)				
	5/21/14	8/21/14	11/20/14	LRAA
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DBP2 Liquor Palace 3302 S. Dort Highway	0.112	0.127	0.033	0.068
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DBP4 University Market 2501 Flushing Road	0.106	0.196	0.094	0.099
DBP5 Taco Bell 3606 Corunna Road	0.079	0.181	0.034	0.074
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.088	0.144	0.054	0.072
DBP7 Salem Housing 3216 MLK Boulevard	0.082	0.112	0.050	0.061
DBP8 BP Gas Station 822 S. Dort Highway	0.075	0.112	0.036	0.056

HAA5 Results (mg/L)				
	5/21/14	8/21/14	11/20/14	LRAA
DBP1 McDonalds 3719 Davison	0.064	0.043	0.016	0.031
DBP2 Liquor Palace 3302 S. Dort Highway	0.052	0.031	0.015	0.025
DBP3 North Flint Auto 6204 N. Saginaw St.	0.048	0.037	0.018	0.026
DBP4 University Market 2501 Flushing Road	0.055	0.017	0.024	0.024
DBP5 Taco Bell 3606 Corunna Road	0.050	0.024	0.015	0.022
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.049	0.030	0.017	0.024
DBP7 Salem Housing 3216 MLK Boulevard	0.041	0.025	0.005	0.018
DBP8 BP Gas Station 822 S. Dort Highway	0.038	0.040	0.021	0.025

Locational running annual average (LRAA): the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Maximum contaminant level (MCL): the maximum permissible level of a contaminant in water which is delivered to any user of a public water system.

The Stage 2 Disinfection By-Products Rule (DBPR) requires systems to meet an LRAA of 0.080 mg/L for TTHM and 0.060 mg/L for HAA5 at each compliance monitoring location.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, January 08, 2015 10:38 AM
To: Benzie, Richard (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: RE: flint

Michael is talking to her.

From: Benzie, Richard (DEQ)
Sent: Thursday, January 08, 2015 9:47 AM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: flint

Did someone call Sandra Wilkes(?) back?

From: Prysby, Mike (DEQ)
Sent: Thursday, January 08, 2015 9:27 AM
To: Busch, Stephen (DEQ); Benzie, Richard (DEQ)
Subject: FW: flint

More reports from Flint concerning the TTHM violation.....

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Bennett, Charles (DEQ)
Sent: Thursday, January 08, 2015 9:14 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: flint

I don't see you named, but this looks like the story you mentioned...

http://www.mlive.com/news/flint/index.ssf/2015/01/flint_report_says_going_back_t.html#incart_river

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, January 08, 2015 10:13 AM
To: Prysby, Mike (DEQ)
Subject: RE: more flint

in the comments, someone posts a PSA from the Flint police instructing people to contact CNN.

From: Bennett, Charles (DEQ)
Sent: Thursday, January 08, 2015 9:16 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: more flint

http://www.mlive.com/news/flint/index.ssf/2015/01/some_flint_city_council_member.html#incart_river

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Wednesday, December 10, 2014 1:20 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: FW: Monitoring Results
Attachments: November 2014 Bromate Results.pdf; December 2014 Radiological Test Results.pdf

update on Flint pbcu monitoring.

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Wednesday, December 10, 2014 12:55 PM
To: Rosenthal, Adam (DEQ)
Subject: Monitoring Results

Adam,

Good afternoon, I just wanted to pass some monitoring results to you. Attached below are the results from November 2014 Bromate monitoring, and our 4th quarter Radiological monitoring. We have also completed out 4th quarter WQM, I should be able to get those results to you by the middle of next week. Also, I thought I would give you an update on our Lead & Copper Monitoring. As of today I have received the results from 12 samples, and I have 39 more samples that should be delivered to the Lansing lab tomorrow (12/11). That will take us to 51 samples total. I have distributed a total of 110 sample bottles, and plan to distribute 25 more by the end of the week. This way I would anticipate being able to collect 100 total. If extra samples come in I will have them analyzed regardless. Enjoy your day, I'm sure I'll talk with you soon.

Mike Glasgow
City of Flint Water Plant


NSF International

789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
 1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

TEST REPORT

Send To: C0211289

Mr. Michael Glasgow
 City of Flint, Municipality
 1101 South Saginaw Street
 Flint, MI 48502

Facility: C0211290

City of Flint Water Plant
 4500 North Dort Highway
 Flint MI 48505
 United States

Result	COMPLETE	Report Date	03-DEC-2014
Customer Name	City of Flint, Municipality		
Tested To	USFDA CFR Title 21 Part 165.110		
Description	Municipal Water		
Test Type	Test only		
Job Number	J-00148751		
Project Number	9841598 (CL03)		
Project Manager	Anna Ciechanowski		

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization

Kerri L. Levanseler
 Kerri Levanseler - Director, Chemistry Laboratory

Date 03-DEC-2014

**General Information**

Standard: USFDA CFR Title 21 Part 165.110
Date and Time Sampled: 11/24/2014 09:21 EST
Product Description: Municipal Water
Test Description: Bromate - November

Sample Id: S-0001103518
Description: Municipal Water - 11/24/2014 09:21 EST
Sampled Date: 11/24/2014
Received Date: 11/25/2014

Testing Parameter	Reporting Limit	Result	FDA SOQ	Units	P / F
Disinfection Residuals/Disinfection By-Products					
Bromate	10	ND	10	ug/L	Pass



<<Additional Information>>

Sample Id: S-0001103518

Test Parameter	Date Analyzed	Time Analyzed	Date Prepared/ Processed
Disinfection Residuals/Disinfection By-Products			
Bromate (Ref: EPA 300.1)	27-NOV-2014		


Testing Laboratories:

	Flag	Id	Address
All work performed at: (Unless otherwise specified)	→	NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C3015	Bromate (Ref: EPA 300.1)

Certifications:

Arizona (# AZ0655)	California (# 03214 CA)	Connecticut (# PH-0625)
Florida (# E-87752 FL)	Hawaii	Indiana
Maryland (# 201)	Michigan (# 0048)	North Carolina (# 26701)
New Jersey (# MI770)	Nevada (# MI000302010A)	New York (# 11206)
Pennsylvania (# 68-00312)	South Carolina (# 81005)	Virginia (# 00045)
Vermont (# VT 11206)		

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

The reported result for Odor, Phenolics, Potassium, Specific Conductance and Total Residual Chlorine cannot be used for compliance purposes within the State of Arizona.

Notes:

- 1) Bottled water sold in the United States shall not contain Fluoride in excess of the levels published by the USFDA in 21 CFR Part 165.110. These levels are based on the annual average of maximum daily air temperatures at the location where the bottled water is sold at retail. Please refer to the most current edition of the regulation to determine the Fluoride maximum level that pertains to your product.
- 2) A blank on the FDA SOQ column indicates that no maximum level has been established by the FDA for that contaminant.
- 3) An ND result means that the contaminant was not detected at or above the detection limit for the instrument.

For a list of NSF International Method Detection Limits refer to
http://www.nsf.org/media/enews/documents/minimum_detection_level_spreadsheet.pdf.


NSF International

789 N. Dixboro Rd. Ann Arbor, MI 48105, USA
 1-800.NSF.MARK | +1-734.769.8010 | www.nsf.org

TEST REPORT

Send To: C0211289

Mr. Michael Glasgow
 City of Flint, Municipality
 1101 South Saginaw Street
 Flint, MI 48502

Facility: C0211290

City of Flint Water Plant
 4500 North Dort Highway
 Flint MI 48505
 United States

Result	COMPLETE	Report Date	05-DEC-2014
Customer Name	City of Flint, Municipality		
Tested To	EPA_DWR		
Description	Qtr 4 - Water Sample		
Test Type	Test only		
Job Number	J-00142265		
Project Number	9329404 (CL03)		
Project Manager	Anna Ciechanowski		

Thank you for having your product tested by NSF International.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization Kerri Levanseler
 Kerri Levanseler - Director, Chemistry Laboratory

Date 05-DEC-2014

**General Information**

Standard: EPA_DWR

Date and Time Sampled: 11/24/2014 09:26 EST

Product Description: Qtr 4 - Water Sample

Sample Id: **S-0001103517**

Description: Qtr 4 - Water Sample - 11/24/2014 09:26 EST

Sampled Date: 11/24/2014

Received Date: 11/25/2014

Testing Parameter	Reporting Limit	Result	Units
Radiologicals			
Radium-226	1	ND	pCi/L
Radium-226, Radium-228 Combined	1	ND	pCi/L
Radium-228	1	ND	pCi/L
P1 Gross Alpha	3	ND	pCi/L
P1 Gross Beta	4	ND	pCi/L



<<Additional Information>>

Sample Id: S-0001103517

Test Parameter	Date Analyzed	Time Analyzed	Date Prepared/ Processed
Radiologicals			
Total Radium-226, Radium-228 Combined Activity	4-DEC-2014		
Gross Alpha and Beta Radioactivity in Drinking Water (Ref: EPA 900.0)	4-DEC-2014		


Testing Laboratories:

	Flag	Id	Address
All work performed at: (Unless otherwise specified)		NSF_AA	NSF International 789 N. Dixboro Road Ann Arbor MI 48105

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C0842	Gross Alpha and Beta Radioactivity in Drinking Water (Ref: EPA 900.0)
C0980	Total Radium-226, Radium-228 Combined Activity

Certifications:

Arizona (# AZ0655)	California (# 03214 CA)	Connecticut (# PH-0625)
Florida (# E-87752 FL)	Hawaii	Indiana
Maryland (# 201)	Michigan (# 0048)	North Carolina (# 26701)
New Jersey (# MI770)	Nevada (# MI000302010A)	New York (# 11206)
Pennsylvania (# 68-00312)	South Carolina (# 81005)	Virginia (# 00045)
Vermont (# VT 11206)		

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF International requirements but is not within its scope of accreditation.

The reported result for Odor, Phenolics, Potassium, Specific Conductance and Total Residual Chlorine cannot be used for compliance purposes within the State of Arizona.

Notes: An ND result means that the contaminant was not detected at or above the detection limit for the instrument.

For a list of NSF International Method Detection Limits refer to
http://www.nsf.org/media/enews/documents/minimum_detection_level_spreadsheet.pdf.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Wednesday, December 10, 2014 1:18 PM
To: Michael Glasgow
Subject: RE: Monitoring Results

Thanks for the update Mike.

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Wednesday, December 10, 2014 12:55 PM
To: Rosenthal, Adam (DEQ)
Subject: Monitoring Results

Adam,

Good afternoon, I just wanted to pass some monitoring results to you. Attached below are the results from November 2014 Bromate monitoring, and our 4th quarter Radiological monitoring. We have also completed out 4th quarter WQM, I should be able to get those results to you by the middle of next week. Also, I thought I would give you an update on our Lead & Copper Monitoring. As of today I have received the results from 12 samples, and I have 39 more samples that should be delivered to the Lansing lab tomorrow (12/11). That will take us to 51 samples total. I have distributed a total of 110 sample bottles, and plan to distribute 25 more by the end of the week. This way I would anticipate being able to collect 100 total. If extra samples come in I will have them analyzed regardless. Enjoy your day, I'm sure I'll talk with you soon.

Mike Glasgow
City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, December 09, 2014 10:39 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint TTHM letter
Attachments: Flint TTHM MCL 14 table.xlsx

Attached is the table for both OEL & LRAA. Still formatting and getting it in the letter.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:33 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Can I get the updated table. I need to call Jennifer Crooks back this morning. Thanks.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Tuesday, December 09, 2014 10:31 AM
To: Busch, Stephen (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Steve,

Initially, I was also not coming up with the LRAA of 99 ppb; however, I discovered that the table (May 21st TTHM column) in our Sept. 10th letter was not correct....the corrected table confirms the 99 ppb LRAA.

Michael Prysby, P.E.
 District Engineer

Office of Drinking Water and Municipal Assistance
517 290-8817

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:13 AM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Adam,

I would like a table showing the 3 rounds of results the LRAA and the current OEL for each of the 8 sites, just for TTHM. I'm not getting a high LRAA of 99 ppb based on the info Mike had provided.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Prysby, Mike (DEQ)
Sent: Monday, December 08, 2014 1:48 PM
To: Rosenthal, Adam (DEQ); Busch, Stephen (DEQ)
Subject: Flint TTHM letter

Adam, Steve

I made some tweaks to the draft letter for consideration and can be tweaked further as needed. Changes are noted in red.....

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

WSSN	System	Mon Prd	Collect Date	Site Code	Address
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP1	3719 DAVISON ROAD
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP2	3302 SOUTH DORT HIGHWAY
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP3	6204 NORTH SAGINAW STREET
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP4	2501 FLUSHING ROAD
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP5	3606 CORUNNA RD
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP6	5018 CLIO RD
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP7	3216 MLK BLVD
02310	FLINT, CITY OF	2Q2014	21-May-14	DBP8	822 S DORT HWY
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP1	3719 DAVISON ROAD
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP2	3302 SOUTH DORT HIGHWAY
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP3	6204 NORTH SAGINAW STREET
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP4	2501 FLUSHING ROAD
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP5	3606 CORUNNA RD
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP6	5018 CLIO RD
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP7	3216 MLK BLVD
02310	FLINT, CITY OF	3Q2014	21-Aug-14	DBP8	822 S DORT HWY
02310	FLINT, CITY OF	4Q2014	20-Nov-14	DBP1	3719 DAVISON ROAD
02310	FLINT, CITY OF	4Q2014	20-Nov-14	DBP2	3302 SOUTH DORT HIGHWAY
02310	FLINT, CITY OF	4Q2014	19-Nov-14	DBP3	6204 NORTH SAGINAW STREET
02310	FLINT, CITY OF	4Q2014	19-Nov-14	DBP4	2501 FLUSHING ROAD
02310	FLINT, CITY OF	4Q2014	20-Nov-14	DBP5	3606 CORUNNA RD
02310	FLINT, CITY OF	4Q2014	19-Nov-14	DBP6	5018 CLIO RD
02310	FLINT, CITY OF	4Q2014	19-Nov-14	DBP7	3216 MLK BLVD
02310	FLINT, CITY OF	4Q2014	20-Nov-14	DBP8	822 S DORT HWY

WSSN	System	MonPrd	Site Code	AveType	Analyte
02310	FLINT, CITY OF	4Q2014	DBP1	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP2	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP3	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP4	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP5	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP6	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP7	OEL	TTHM
02310	FLINT, CITY OF	4Q2014	DBP8	OEL	TTHM

Analyte	Result	Unit	LRAA	Units
2950	0.162	MG/L	0.04	MG/L
2950	0.112	MG/L	0.03	MG/L
2950	0.097	MG/L	0.02	MG/L
2950	0.106	MG/L	0.03	MG/L
2950	0.079	MG/L	0.02	MG/L
2950	0.088	MG/L	0.02	MG/L
2950	0.082	MG/L	0.02	MG/L
2950	0.075	MG/L	0.02	MG/L
2950	0.145	MG/L	0.08	MG/L
2950	0.127	MG/L	0.06	MG/L
2950	0.118	MG/L	0.05	MG/L
2950	0.196	MG/L	0.08	MG/L
2950	0.181	MG/L	0.07	MG/L
2950	0.144	MG/L	0.06	MG/L
2950	0.112	MG/L	0.05	MG/L
2950	0.112	MG/L	0.05	MG/L
2950	0.059	MG/L	0.09	MG/L
2950	0.033	MG/L	0.07	MG/L
2950	0.041	MG/L	0.06	MG/L
2950	0.094	MG/L	0.1	MG/L
2950	0.034	MG/L	0.07	MG/L
2950	0.054	MG/L	0.07	MG/L
2950	0.05	MG/L	0.06	MG/L
2950	0.036	MG/L	0.06	MG/L

ResultsUsed	LRAA	Units
3	0.106	MG/L
3	0.076	MG/L
3	0.074	MG/L
3	0.122	MG/L
3	0.082	MG/L
3	0.085	MG/L
3	0.074	MG/L
3	0.065	MG/L

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, December 09, 2014 10:14 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: RE: Flint TTHM letter

ok, I'll put it in there.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 09, 2014 10:13 AM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint TTHM letter

Adam,

I would like a table showing the 3 rounds of results the LRAA and the current OEL for each of the 8 sites, just for TTHM. I'm not getting a high LRAA of 99 ppb based on the info Mike had provided.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Monday, December 08, 2014 1:48 PM
To: Rosenthal, Adam (DEQ); Busch, Stephen (DEQ)
Subject: Flint TTHM letter

Adam, Steve

I made some tweaks to the draft letter for consideration and can be tweaked further as needed. Changes are noted in red.....

Michael Prysby, P.E.
 District Engineer

Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Monday, December 08, 2014 9:12 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: Flint TTHM MCL letter
Attachments: Flint DBP MCL 4Q14.doc

Attached is the draft. I put the highest LRAA in the letter & have a table attachment that lists all results. Or we can put the table in the letter. Let me know.

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

[Date]

Mr. Brent Wright, Operation Supervisor
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, MI 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice – Maximum Contaminant Level for Total Trihalomethanes, 3rd Quarter of 2014

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the City of Flint is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels (MCL) for disinfection byproducts*, of the 1979 Administrative Code.

In accordance with R.325.10610, *MCLs for disinfection byproducts*, of the 1979 Administrative Code, the MCL for disinfection byproduct total trihalomethanes (TTHM) is 0.080 milligrams per liter (mg/l). Our records show that the City of Flint's highest TTHM locational running annual average (LRAA), based on the last three quarters ending November 30, 2014, is 0.099 mg/l which exceeds the standard.

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice as soon as practical but no later than thirty (30) days after the supplier learns of the violation, by mail or direct delivery **and** by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample public notice (PN). **Please notify your consumers by January 10, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the public notice.** This violation must be included in your Consumer Confidence Report (CCR,) due by July 1, 2015. The public notification must be repeated every quarter until you no longer exceed the TTHM standard. **Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.** Contact our office for a more complete summary of our fines policies.

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on August 13, 2014, and will continue until TTHM LRAA is below the MCL.

If you have any factual information you would like us to consider regarding the violation identified in this Notice, please provide them in a written response by September 19, 2014.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this Violation Notice, please contact us at the numbers below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-290-8817

Adam Rosenthal, EQA
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-284-6644

MFP:AR:JR

Enclosures

cc:

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Testing results from October 1, 2014 to December 31, 2014 show that our system exceeds the standard, or maximum contaminant level (MCL), for trihalomethanes. The standard for trihalomethanes is 80 µg/L. The level of trihalomethanes in our system was determined by averaging all samples collected by our system for the past 12 months. The average level of trihalomethanes in our system was 99 µg/L.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem by 2015.

For more information, please contact Mr. Brent Wright at 517-787-6537 or the Flint Water Plant at 4500 North Dort Highway, Flint, MI 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DEQ.

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, November 07, 2014 10:45 AM
To: Busch, Stephen (DEQ)
Subject: RE: Flint tthm lab results
Attachments: FlintDBP.pdf

here's everything.

-----Original Message-----

From: Busch, Stephen (DEQ)
Sent: Friday, November 07, 2014 10:02 AM
To: Rosenthal, Adam (DEQ)
Subject: Flint tthm lab results

Adam can you email me the PDFs of flint results from may 21 and August 21. Thanks. I need the full results that break down all compounds not just the total

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance MDEQ
517-643-2314

Sent from my iPhone



Michigan Department of Environmental Quality

***Replicate Laboratory Report for
Lansing Drinking Water Laboratory***

Owner/Location Information:

MCDONALDS

3719 DAVISON RD.

FLINT MI

Sample Number: LLF19422

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 5/21/2014 9:28:00 AM

Arrival Date: 5/22/2014 1:18:47 PM

Site Code: DBP1

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: SINK

Collector: Public Water Supply Operator

Collected By: MICHAEL GLASGOW

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	NO	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.016	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.005	0.001	mg/L	EPA 552.1/552.2
79-43-8	DICHLOROACETIC ACID	0.036	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.064	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.023	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0014	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.019	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.097	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.045	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1624	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:36:09 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

LIQUOR PALACE
3302 S DORT HWY
FLINT MI 48507

Sample Number: LLF19423

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 5/21/2014 11:08:00 AM

Arrival Date: 5/22/2014 1:18:47 PM

Site Code: DBP2

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: SINK

Collector: Public Water Supply Operator

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.012	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.003	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.026	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.052	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.023	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0016	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.019	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.055	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.036	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1116	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:36:22 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

NORTH FLINT AUTOMOTIVE
6204 N SAGINAW ST
FLINT MI 48506

Sample Number: LLF19424

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 5/21/2014 12:16:00 PM

Arrival Date: 5/22/2014 1:18:48 PM

Site Code: DBP3

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: SINK

Collector: Public Water Supply Operator

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.012	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.004	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.023	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.048	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.021	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0015	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.018	0.0005	mg/L	EPA 524.2
87-68-3	CHLOROFORM	0.044	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.033	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.0965	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 369 of 1978 as amended.

Print Date: Fri Nov 7 10:36:32 EST 2014



Michigan Department of Environmental Quality

***Replicate Laboratory Report for
Lansing Drinking Water Laboratory***

Owner/Location Information:

UNIVERSITY MARKET
2501 FLUSHING RD
FLINT MI 48504

Sample Number: LLF19425

Sample/Collection Information:

WSSN: 02310

Site Code: DBP4

County: Genesee

Water Source: Public Community Water Supply

Township:

Sample Reason: Routine Monitoring

Section:

Sample Point: Treated Public Distribution System

Well #:

Point Description: SINK

Collection Date: 5/21/2014 11:37:00 AM

Collector: Public Water Supply Operator

Arrival Date: 5/22/2014 1:18:48 PM

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.013	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.004	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.026	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.055	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.025	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0014	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.017	0.0005	mg/L	EPA 524.2
87-66-3	CHLOROFORM	0.053	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.035	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1064	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:36:41 EST 2014



Michigan Department of Environmental Quality

***Replicate Laboratory Report for
Lansing Drinking Water Laboratory***

Owner/Location Information:

B & P GAS STATION
822 S DORT HWY
FLINT MI 48503

Sample Number: LLF19426

Sample/Collection Information:

WSSN: 02310

Site Code: DBP5

County: Genesee

Water Source: Public Community Water Supply

Township:

Sample Reason: Routine Monitoring

Section:

Sample Point: Treated Public Distribution System

Well #:

Point Description: SINK

Collection Date: 5/21/2014 10:56:00 AM

Collector: Public Water Supply Operator

Arrival Date: 5/22/2014 1:18:48 PM

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.010	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.003	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.018	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.038	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.017	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0011	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.014	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.033	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.027	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.0751	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:36:50 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

SALEM HOUSING
3216 MLK BLVD
FLINT MI 48505

Sample Number: LLF19427

Sample/Collection Information:

WSSN: 02310

Site Code: DBP6

County: Genesee

Water Source: Public Community Water Supply

Township:

Sample Reason: Routine Monitoring

Section:

Sample Point: Treated Public Distribution System

Well #:

Point Description: SINK

Collection Date: 5/21/2014 11:52:00 AM

Collector: Public Water Supply Operator

Arrival Date: 5/22/2014 1:18:49 PM

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.011	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.003	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.020	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.041	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.018	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0012	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.015	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.039	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.027	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.0822	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 306 of 1978 as amended.

Print Date: Fri Nov 7 10:36:58 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

KROGER
5018 CLIO RD
FLINT MI 48504

Sample Number: LLF19428

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 5/21/2014 12:04:00 PM

Arrival Date: 5/22/2014 1:18:49 PM

Site Code: DBP7

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: SINK

Collector: Public Water Supply Operator

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.012	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.004	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.024	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.049	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.021	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0012	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.015	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.042	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.030	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.0882	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:37:06 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

TACO BELL
3606 CORUNNA RD
FLINT MI 48532

Sample Number: LLF19429

Sample/Collection Information:

WSSN: 02310

Site Code: DBP8

County: Genesee

Water Source: Public Community Water Supply

Township:

Sample Reason: Routine Monitoring

Section:

Sample Point: Treated Public Distribution System

Well #:

Point Description: SINK

Collection Date: 5/21/2014 11:25:00 AM

Collector: Public Water Supply Operator

Arrival Date: 5/22/2014 1:18:49 PM

Collected By: NICOLE ALEXANDER

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.014	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.004	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.024	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.050	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.022	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0012	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.016	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.036	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.027	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.0792	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1976 as amended.

Print Date: Fri Nov 7 10:37:20 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT - WATER PLANT
4500 N DORT HWY
FLINT MI 48505

Sample Number: LLF19430

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 5/22/2014 8:30:00 AM

Arrival Date: 5/22/2014 1:19:53 PM

Site Code: LAB TAP

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: PLANT LAB

Collector: Public Water Supply Operator

Collected By: MICHAEL GLASGOW

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
16984-48-8	FLUORIDE (AUTOMATED)	0.16	0.1	mg/L	SM 4500 FC
7439-89-6	IRON	ND	0.1	mg/L	SM 3500 FeB
HARD-00-C	HARDNESS AS CaCO3	209	20	mg/L	SM 2340 C
7440-23-5	SODIUM	15	5	mg/L	SM 3500 NaB
7440-38-2	ARSENIC (TOTAL)	ND	0.002	mg/L	EPA 200.8
7440-39-3	BARIUM	0.03	0.01	mg/L	EPA 200.8
7440-41-7	BERYLLIUM	ND	0.0004	mg/L	EPA 200.8
57-12-5	CYANIDE	ND	0.02	mg/L	OIA-1677
7440-43-9	CADMIUM (TOTAL)	ND	0.0003	mg/L	EPA 200.8
7647-14-5	CHLORIDE (AUTOMATED)	79	4	mg/L	SM 4500-Cl E
7440-47-3	CHROMIUM (TOTAL)	ND	0.01	mg/L	EPA 200.8
93-76-5	2,4,5-T	ND	0.002	mg/L	EPA 515.4
93-72-1	2,4,5-TP (SILVEX)	ND	0.0003	mg/L	EPA 515.4
94-75-7	2,4-D	ND	0.002	mg/L	EPA 515.4
50594-66-6	ACIFLUORFEN	ND	0.004	mg/L	EPA 515.4
25057-89-0	BENTAZON	ND	0.002	mg/L	EPA 515.4
1918-00-9	DICAMBA	ND	0.002	mg/L	EPA 515.4
88-85-7	DINOSEB	ND	0.0003	mg/L	EPA 515.4
87-86-5	PENTACHLOROPHENOL	ND	0.00006	mg/L	EPA 515.4
1918-02-1	PICLORAM	ND	0.001	mg/L	EPA 515.4
1861-32-1	TOTAL DCPA, MONO & DI-ACID DEGRADATES	ND	0.001	mg/L	EPA 515.4
116-06-3	ALDICARB	ND	0.0005	mg/L	EPA 531.2
1646-88-4	ALDICARB SULFONE	ND	0.0005	mg/L	EPA 531.2
1646-87-3	ALDICARB SULFOXIDE	ND	0.0005	mg/L	EPA 531.2
63-25-2	CARBARYL	ND	0.001	mg/L	EPA 531.2
1563-66-2	CARBOFURAN	ND	0.0005	mg/L	EPA 531.2
16655-82-6	HYDROXYCARBOFURAN,3-	ND	0.001	mg/L	EPA 531.2
2032-65-7	METHIOCARB	ND	0.001	mg/L	EPA 531.2
16752-77-5	METHOMYL	ND	0.001	mg/L	EPA 531.2
23135-22-0	OXAMYL	ND	0.001	mg/L	EPA 531.2
114-26-1	PROPOXUR (BAYGON)	ND	0.001	mg/L	EPA 531.2
34256-82-1	ACETOCHLOR	ND	0.001	mg/L	EPA 525.2

Laboratory Sample Report

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15972-60-8	ALACHLOR	ND	0.0002	mg/L	EPA 525.2
309-00-2	ALDRIN	ND	0.0004	mg/L	EPA 525.2
1912-24-9	ATRAZINE	ND	0.0002	mg/L	EPA 525.2
5103-71-9	CHLORDANE, ALPHA-	ND	0.0002	mg/L	EPA 525.2
5103-74-2	CHLORDANE, GAMMA-	ND	0.0002	mg/L	EPA 525.2
72-54-8	DDD,4,4'-	ND	0.001	mg/L	EPA 525.2
72-55-9	DDE,4,4'-	ND	0.001	mg/L	EPA 525.2
50-29-3	DDT,4,4'-	ND	0.0005	mg/L	EPA 525.2
60-57-1	DIELDRIN	ND	0.0005	mg/L	EPA 525.2
72-20-8	ENDRIN	ND	0.0001	mg/L	EPA 525.2
7421-93-4	ENDRIN ALDEHYDE	ND	0.001	mg/L	EPA 525.2
76-44-8	HEPTACHLOR	ND	0.0002	mg/L	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	ND	0.0001	mg/L	EPA 525.2
118-74-1	HEXACHLOROBENZENE	ND	0.0001	mg/L	EPA 525.2
319-84-6	HEXACHLOROCYCLOHEXANE (ALPHA-BHC)	ND	0.001	mg/L	EPA 525.2
319-85-7	HEXACHLOROCYCLOHEXANE (BETA-BHC)	ND	0.001	mg/L	EPA 525.2
319-86-8	HEXACHLOROCYCLOHEXANE (DELTA-BHC)	ND	0.001	mg/L	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	0.0005	mg/L	EPA 525.2
58-89-9	LINDANE (GAMMA-BHC)	ND	0.0001	mg/L	EPA 525.2
72-43-5	METHOXYCHLOR	ND	0.0001	mg/L	EPA 525.2
51218-45-2	METOLACHLOR	ND	0.001	mg/L	EPA 525.2
21087-64-9	METRIBUZIN	ND	0.001	mg/L	EPA 525.2
2212-67-1	MOLINATE	ND	0.0005	mg/L	EPA 525.2
12674-11-2	PCB (AROCLOR 1018)	ND	0.0001	mg/L	EPA 525.2
11104-28-2	PCB (AROCLOR 1221)	ND	0.0001	mg/L	EPA 525.2
11141-16-5	PCB (AROCLOR 1232)	ND	0.0001	mg/L	EPA 525.2
53469-21-9	PCB (AROCLOR 1242)	ND	0.0001	mg/L	EPA 525.2
12672-29-6	PCB (AROCLOR 1248)	ND	0.0001	mg/L	EPA 525.2
11097-69-1	PCB (AROCLOR 1254)	ND	0.0001	mg/L	EPA 525.2
11096-82-5	PCB (AROCLOR 1260)	ND	0.0001	mg/L	EPA 525.2
59536-65-1	POLYBROMINATED BIPHENYLS	ND	0.0001	mg/L	EPA 525.2
122-34-9	SIMAZINE	ND	0.0002	mg/L	EPA 525.2
8001-35-2	TOXAPHENE	ND	0.001	mg/L	EPA 525.2
71-43-2	BENZENE	ND	0.0005	mg/L	EPA 524.2
108-86-1	BROMOBENZENE	ND	0.0005	mg/L	EPA 524.2
74-97-5	BROMOCHLOROMETHANE	ND	0.0005	mg/L	EPA 524.2
75-25-2	BROMOFORM	0.0010	0.0005	mg/L	EPA 524.2
74-83-9	BROMOMETHANE	ND	0.001	mg/L	EPA 524.2
104-51-8	BUTYLBENZENE,NORMAL-	ND	0.0005	mg/L	EPA 524.2
135-98-8	BUTYLBENZENE,SEC-	ND	0.0005	mg/L	EPA 524.2
98-08-6	BUTYLBENZENE,TERT-	ND	0.0005	mg/L	EPA 524.2
56-23-5	CARBON TETRACHLORIDE	ND	0.0005	mg/L	EPA 524.2
108-90-7	CHLOROBENZENE	ND	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.013	0.0005	mg/L	EPA 524.2
75-00-3	CHLOROETHANE	ND	0.0005	mg/L	EPA 524.2
67-86-3	CHLOROFORM	0.022	0.0005	mg/L	EPA 524.2
74-87-3	CHLOROMETHANE	ND	0.0005	mg/L	EPA 524.2
95-49-8	CHLOROTOLUENE,2-	ND	0.0005	mg/L	EPA 524.2
106-43-4	CHLOROTOLUENE,4-	ND	0.0005	mg/L	EPA 524.2
74-95-3	DIBROMOMETHANE	ND	0.0005	mg/L	EPA 524.2
95-50-1	DICHLOROBENZENE,1,2-	ND	0.0005	mg/L	EPA 524.2
541-73-1	DICHLOROBENZENE,1,3-	ND	0.0005	mg/L	EPA 524.2
106-46-7	DICHLOROBENZENE,1,4-	ND	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.020	0.0005	mg/L	EPA 524.2
75-71-8	DICHLORODIFLUOROMETHANE	ND	0.001	mg/L	EPA 524.2
75-34-3	DICHLOROETHANE,1,1-	ND	0.0005	mg/L	EPA 524.2
107-08-2	DICHLOROETHANE,1,2-	ND	0.0005	mg/L	EPA 524.2

Laboratory Sample Report

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	DICHLOROETHYLENE,1,1-	ND	0.0005	mg/L	EPA 524.2
156-59-2	DICHLOROETHYLENE,1,2-CIS	ND	0.0005	mg/L	EPA 524.2
156-80-5	DICHLOROETHYLENE,1,2-TRANS	ND	0.0005	mg/L	EPA 524.2
78-87-6	DICHLOROPROPANE,1,2-	ND	0.0005	mg/L	EPA 524.2
142-28-9	DICHLOROPROPANE,1,3-	ND	0.0005	mg/L	EPA 524.2
594-20-7	DICHLOROPROPANE,2,2-	ND	0.0005	mg/L	EPA 524.2
563-58-6	DICHLOROPROPENE,1,1-	ND	0.0005	mg/L	EPA 524.2
10061-01-5	DICHLOROPROPENE,1,3-CIS	ND	0.0005	mg/L	EPA 524.2
10061-02-6	DICHLOROPROPENE,1,3-TRANS	ND	0.0005	mg/L	EPA 524.2
100-41-4	ETHYLBENZENE	ND	0.0005	mg/L	EPA 524.2
75-69-4	FLUOROTRICHLOROMETHANE	ND	0.001	mg/L	EPA 524.2
87-68-3	HEXACHLOROBUTADIENE	ND	0.0005	mg/L	EPA 524.2
98-82-8	ISOPROPYL BENZENE	ND	0.0005	mg/L	EPA 524.2
99-87-6	ISOPROPYL TOLUENE, PARA-	ND	0.0005	mg/L	EPA 524.2
78-93-3	METHYL ETHYL KETONE	ND	0.005	mg/L	EPA 524.2
108-10-1	METHYL ISOBUTYL KETONE	ND	0.005	mg/L	EPA 524.2
1634-04-4	METHYL TERT-BUTYL ETHER	ND	0.001	mg/L	EPA 524.2
75-09-2	METHYLENE CHLORIDE	ND	0.0006	mg/L	EPA 524.2
91-20-3	NAPHTHALENE	ND	0.0005	mg/L	EPA 524.2
98-95-3	NITROBENZENE	ND	0.01	mg/L	EPA 524.2
103-65-1	PROPYLBENZENE, NORMAL-	ND	0.0005	mg/L	EPA 524.2
100-42-5	STYRENE	ND	0.0005	mg/L	EPA 524.2
630-20-6	TETRACHLOROETHANE,1,1,1,2-	ND	0.0005	mg/L	EPA 524.2
79-34-5	TETRACHLOROETHANE,1,1,2,2-	ND	0.0005	mg/L	EPA 524.2
127-18-4	TETRACHLOROETHYLENE	ND	0.0006	mg/L	EPA 524.2
109-99-9	TETRAHYDROFURAN	ND	0.005	mg/L	EPA 524.2
108-88-3	TOLUENE	ND	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.056	NA	mg/L	EPA 524.2
87-61-6	TRICHLOROBENZENE,1,2,3-	ND	0.0005	mg/L	EPA 524.2
120-82-1	TRICHLOROBENZENE,1,2,4-	ND	0.0005	mg/L	EPA 524.2
71-55-6	TRICHLOROETHANE,1,1,1-	ND	0.0005	mg/L	EPA 524.2
79-00-5	TRICHLOROETHANE,1,1,2-	ND	0.0005	mg/L	EPA 524.2
79-01-6	TRICHLOROETHYLENE	ND	0.0005	mg/L	EPA 524.2
96-18-4	TRICHLOROPROPANE,1,2,3-	ND	0.0006	mg/L	EPA 524.2
95-63-6	TRIMETHYLBENZENE,1,2,4-	ND	0.0005	mg/L	EPA 524.2
108-67-8	TRIMETHYLBENZENE,1,3,5-	ND	0.0005	mg/L	EPA 524.2
75-01-4	VINYL CHLORIDE	ND	0.0004	mg/L	EPA 524.2
XYLMP-00-C	XYLENE,META-&PARA-	ND	0.0005	mg/L	EPA 524.2
95-47-6	XYLENE,ORTHO-	ND	0.0005	mg/L	EPA 524.2
1330-20-7	XYLENES (TOTAL)	ND	NA	mg/L	EPA 524.2
7439-97-6	MERCURY	ND	0.0001	mg/L	EPA 200.8
7440-02-0	NICKEL	ND	0.01	mg/L	EPA 200.8
14797-85-0	NITRITE AS N (AUTOMATED)	ND	0.06	mg/L	10-107-04-2-B
14797-55-8	NITRATE AS N (AUTOMATED)	0.4	0.4	mg/L	10-107-04-2-B
7439-92-1	LEAD (TOTAL)	ND	0.001	mg/L	EPA 200.8
7440-36-0	ANTIMONY	ND	0.0006	mg/L	EPA 200.8
7782-49-2	SELENIUM (TOTAL)	ND	0.001	mg/L	EPA 200.8
14808-79-8	SULFATE (AUTOMATED)	25	10	mg/L	SM 4500 SO4E
7440-28-0	THALLIUM	ND	0.0002	mg/L	EPA 200.8

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:37:35 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
DORT WELL
FLINT MI 48505

Sample Number: LLF27719

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 7/15/2014 2:09:00 PM

Arrival Date: 7/17/2014 8:24:09 AM

Site Code:

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Public System Surface Water

Point Description: SAMPLE SIN

Collector: Public Water Supply Operator

Collected By: MICHAEL GLASGOW

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
75-25-2	BROMOFORM	0.0033	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.028	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.078	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.048	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1533	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:11 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
822 S DORT HWY
FLINT MI 48503

Sample Number: LLF34165

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 10:45:00 AM

Arrival Date: 8/21/2014 3:03:50 PM

Site Code: SITE #2 - DBP #2

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: BATHROOM S

Collector: Public Water Supply Operator

Collected By: CHRIS BEATENHEAD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.008	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.007	0.002	mg/L	EPA 552.1/552.2
75-69-0	DALAPON	0.001	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.003	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.016	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.040	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.014	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0020	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.016	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.063	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.031	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1120	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:28 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
3719 DAVISON RD
FLINT MI 48508

Sample Number: LLF34166

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 9:53:00 AM

Arrival Date: 8/21/2014 3:03:51 PM

Site Code: SITE #1 - DBP #1

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: KITCHEN SI

Collector: Public Water Supply Operator

Collected By: CHRIS BEATENHEAD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.006	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.007	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	0.002	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.002	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.013	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.043	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.021	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0023	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.020	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.084	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.039	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1453	0.0005	mg/L	EPA 524.2

Laboratory Comments:

Additional volatile organic compound(s) were detected. For quantitation and confirmation request analysis for CXVO.

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:35 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
2501 FLUSHING RD
FLINT MI 48504

Sample Number: LLF34167

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 11:33:00 AM

Arrival Date: 8/21/2014 3:03:51 PM

Site Code: SITE #5 - DBP #5

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: KITCHEN SI

Collector: Public Water Supply Operator

Collected By: KEVIN MC LEOD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-86-3	BROMOCHLOROACETIC ACID	0.001	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	ND	0.002	mg/L	EPA 552.1/552.2
78-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
831-64-1	DIBROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.006	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.017	NA	mg/L	EPA 552.1/552.2
78-03-9	TRICHLOROACETIC ACID	0.011	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0032	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.027	0.0005	mg/L	EPA 524.2
67-86-3	CHLOROFORM	0.111	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.055	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1982	0.0005	mg/L	EPA 524.2

Laboratory Comments:

Quality control results were outside allowed limits due to matrix interferences.

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:41 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
3606 CORUNNA RD
FLINT MI 48532

Sample Number: LLF34168

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 12:13:00 PM

Arrival Date: 8/21/2014 3:03:52 PM

Site Code: SITE 34 - DBP #4

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: BATHROOM S

Collector: Public Water Supply Operator

Collected By: CHRIS BEATENHEAD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.002	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.006	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.007	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.024	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.011	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0033	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.026	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.094	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.058	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1813	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:47 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

CITY OF FLINT
6204 N SAGINAW ST
FLINT MI 48505

Sample Number: LLF34169

Sample/Collection Information:

WSSN: 02310
County: Genesee
Township:
Section:
Well #:
Collection Date: 8/21/2014 10:25:00 AM
Arrival Date: 8/21/2014 3:03:52 PM

Site Code: SITE #8 - DBP #8
Water Source: Public Community Water Supply
Sample Reason: Routine Monitoring
Sample Point: Treated Public Distribution System
Point Description: BATHROOM S
Collector: Public Water Supply Operator
Collected By: KEVIN MC LEOD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.009	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.006	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.004	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.018	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.037	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.009	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0023	0.0005	mg/L	EPA 524.2
124-46-1	CHLORODIBROMOMETHANE	0.016	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.064	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.036	0.0005	mg/L	EPA 524.2
TTHM-90-C	TOTAL TRIHALOMETHANES	0.1183	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:38:53 EST 2014



Michigan Department of Environmental Quality

Replicate Laboratory Report for Lansing Drinking Water Laboratory

Owner/Location Information:

CITY OF FLINT
5018 CLIO RD
FLINT MI 48504

Sample Number: LLF34170

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 10:45:00 AM

Arrival Date: 8/21/2014 3:03:53 PM

Site Code: SITE #7 - DBP #7

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: BATHROOM S

Collector: Public Water Supply Operator

Collected By: KEVIN MC LEOD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-96-3	BROMOCHLOROACETIC ACID	0.003	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.006	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	0.001	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.009	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.030	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.014	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0024	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.019	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.082	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.041	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1444	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:39:02 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:

3216 M L KING BLVD
FLINT MI 48505

Sample Number: LLF34171

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 11:05:00 AM

Arrival Date: 8/21/2014 3:03:53 PM

Site Code: SITE #6 - DBP #6

Water Source: Public Community Water Supply

Sample Reason: Routine Monitoring

Sample Point: Treated Public Distribution System

Point Description: BATHROOM S

Collector: Public Water Supply Operator

Collected By: KEVIN MC LEOD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
79-08-3	BROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
5589-98-3	BROMOCHLOROACETIC ACID	0.001	0.001	mg/L	EPA 552.1/552.2
79-11-8	CHLOROACETIC ACID	0.005	0.002	mg/L	EPA 552.1/552.2
75-99-0	DALAPON	ND	0.001	mg/L	EPA 552.1/552.2
631-64-1	DIBROMOACETIC ACID	ND	0.001	mg/L	EPA 552.1/552.2
79-43-6	DICHLOROACETIC ACID	0.006	0.001	mg/L	EPA 552.1/552.2
THA-00-C	TOTAL HALOACETIC ACID (FIVE)	0.025	NA	mg/L	EPA 552.1/552.2
76-03-9	TRICHLOROACETIC ACID	0.014	0.001	mg/L	EPA 552.1/552.2
75-25-2	BROMOFORM	0.0024	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.018	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.059	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.035	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1124	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:39:15 EST 2014



Michigan Department of Environmental Quality

*Replicate Laboratory Report for
Lansing Drinking Water Laboratory*

Owner/Location Information:

CITY OF FLINT
1416 DUPONT ST
FLINT MI 48503

Sample Number: LLF34172

Sample/Collection Information:

WSSN: 02310
County: Genesee
Township:
Section:
Well #:
Collection Date: 8/21/2014 11:18:00 AM
Arrival Date: 8/21/2014 3:04:02 PM

Site Code:
Water Source: Public Community Water Supply
Sample Reason: Water Quality Problem
Sample Point: Public System Well
Point Description: RESERVOIR
Collector: Public Water Supply Operator
Collected By: KEVIN MC LEOD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
75-25-2	BROMOFORM	0.0024	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.019	0.0005	mg/L	EPA 524.2
67-66-3	CHLOROFORM	0.076	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.037	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1344	0.0005	mg/L	EPA 524.2

Laboratory Comments:

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:39:25 EST 2014



Michigan Department of Environmental Quality

**Replicate Laboratory Report for
Lansing Drinking Water Laboratory**

Owner/Location Information:CITY OF FLINT
1100 CEDAR ST
FLINT MI 48503Sample Number: LLF34173

Sample/Collection Information:

WSSN: 02310

County: Genesee

Township:

Section:

Well #:

Collection Date: 8/21/2014 11:44:00 AM

Arrival Date: 8/21/2014 3:04:06 PM

Site Code:

Water Source: Public Community Water Supply

Sample Reason: Water Quality Problem

Sample Point: Public System Well

Point Description: RESERVOIR

Collector: Public Water Supply Operator

Collected By: CHRIS BEATENHEAD

<u>CasNo</u>	<u>Analyte</u>	<u>Result</u>	<u>Detect</u>	<u>Units</u>	<u>Method</u>
75-25-2	BROMOFORM	0.0033	0.0005	mg/L	EPA 524.2
124-48-1	CHLORODIBROMOMETHANE	0.025	0.0005	mg/L	EPA 524.2
67-68-3	CHLOROFORM	0.080	0.0005	mg/L	EPA 524.2
75-27-4	DICHLOROBROMOMETHANE	0.055	0.0005	mg/L	EPA 524.2
TTHM-00-C	TOTAL TRIHALOMETHANES	0.1633	0.0005	mg/L	EPA 524.2

Laboratory Comments:

Results do not agree between vials. The concentration of chloroform was above the calibrated level of the instrument (80 ppb).

By authority of PA 368 of 1978 as amended.

Print Date: Fri Nov 7 10:39:35 EST 2014

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Friday, November 07, 2014 10:36 AM
To: Busch, Stephen (DEQ)
Subject: RE: Flint tthm lab results

http://intranet.deq.state.mi.us/waterchem/ReportPage.asp?sample_code=LLF19422

Tell me if you can open this. If so, I'll send the rest. Otherwise I'll have to scan them.

Adam

-----Original Message-----

From: Busch, Stephen (DEQ)
Sent: Friday, November 07, 2014 10:02 AM
To: Rosenthal, Adam (DEQ)
Subject: Flint tthm lab results

Adam can you email me the PDFs of flint results from may 21 and August 21. Thanks. I need the full results that break down all compounds not just the total

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance MDEQ
517-643-2314

Sent from my iPhone

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Wednesday, October 29, 2014 9:19 AM
To: Busch, Stephen (DEQ)
Subject: Flint PN

I can't find anything on their website or the news. We gave them a 11/2/14 deadline to issue the PN.

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Monday, October 06, 2014 3:23 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Flint MCL VN
Attachments: Flint MCLVN 8-9 14.doc

Attached is the VN for edit/review. Wasn't sure who needed to be CC'd, so let me know.

Adam



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

Date

Mr. Brent Wright, Operation Supervisor
City Of Flint - D P W
Flint Water Plant
4500 North Dort Highway
Flint, MI 48505

WSSN: 02310
City Of Flint

Dear Mr. Wright:

SUBJECT: Violation Notice – Maximum Contaminant Level for Total Coliform

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the City of Flint is in violation of the Safe Drinking Water Act 1976 PA 399, as amended (Act 399); R 325.10602 *MCLs for total coliform bacteria*; of the 1979 Administrative Code.

In accordance with R 325.10602 *MCLs for total coliform bacteria*, a water supply that collects 40 or more samples per month is in compliance with the MCL for total coliforms if not more than 5% of the samples collected during a month are total coliform-positive. Our records show that 15 out of 124 and 15 of 150 samples collected were total coliform-positive during the months of August and September 2014 respectively, which are violations of the MCL. Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. The ODWMA guided you in the response of the total coliform-positive samples and repeat sampling protocol.

Our investigation is considered complete. These violations began on August 15, 2014 and September 5, 2014 and continued until you returned to compliance.

To return to compliance, you collected repeat samples on August 18, 2014 and September 8, 2014 that did not detect coliform bacteria. Although the specific cause of contamination has not been conclusively identified, it appears the situations have been corrected."

The August MCL violation was elevated to an acute MCL which required immediate notification and was correctly public noticed, however the September MCL violation still requires a Tier 2 public notice. Administrative rule R 325.10403 requires that suppliers provide public notice not later than 30 days after learning of the violation by mail or direct delivery and by any other means reasonably calculated to reach other persons regularly served by the system. Enclosed is a sample public notice. Please notify your consumers by November 2, 2014 and send us a signed and dated copy of the notice that was issued within 10 days of distributing the public notice. These violations must be included in your Consumer Confidence Report (CCR,) due by July 1, 2015.

Failure to issue a public notice for this violation may result in a fine of at least \$1000 per day of the violation up to a maximum of \$5000. Additional violations are subject to fines of increasing

amounts. If you would like more information on the ODWMA policy on administrative fines policy, contact us at the numbers below.

If you have any factual information you would like us to consider regarding the violations identified in this Notice please provide it in a written response by October 20, 2014.

We anticipate and appreciate your cooperation in resolving this matter. If you have any questions regarding this Violation Notice, please contact us at the numbers below.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-290-8817

Adam Rosenthal, EQA
Lansing District Office
Office of Drinking Water & Municipal
Assistance
517-284-6644

MFP:AR:JR

Enclosures

cc:

Genesee County Health Department

Important Information About Your Drinking Water

Tests showed coliform bacteria in the City of Flint water

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

We routinely monitor for drinking water contaminants. We took 150 samples to test for the presence of coliform bacteria during September 2014. 15 of those samples (10%) showed the presence of coliform bacteria. The standard is that no more than 5 percent of our samples may do so.

What should I do?

You do not need to boil your water or take other corrective actions. However, if you have specific health concerns, consult your doctor. People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their healthcare providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. A portion of the City was notified to boil their water at the time of the incident until it was resolved. Coliform bacteria are generally not harmful themselves.

Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than were allowed and this was a warning of potential problems.

Usually, coliforms are a sign that there could be a problem with the system's treatment or distribution system (pipes). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or E. coli, are present. We did not find any of these bacteria in our subsequent testing, and further testing shows that this problem has been resolved.

What happened? What was done? On September 5, 2014, after routine and repeat samples showed the presence of total coliform, a boil water order was issued to the affected area. That area was flushed and resampled until samples were non-detect for total coliform. The boil order was lifted on September 9, 2014. Samples collected since then show that all results met acceptable limits.

For more information, please contact Mr. Brent Wright, Water Plant Supervisor, City Of Flint - DPW at 810.787.6537 ext. 3510 or Flint Water Plant - 4500 North Dort Highway, Flint, MI 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature

Title

Date Distributed

Reminder to water supplier: This notice / certification must be sent to the DNRE.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, December 17, 2015 10:25 AM
To: Rosenthal, Adam (DEQ)
Cc: Rennaker, Joanne (DEQ); Prysby, Mike (DEQ)
Subject: FW: Quesion

Adam,

Can you work with Jo Anne to pull scan and email this information. WQP and MOR distribution data (TCR and CI). Thanks.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Lytle, Darren [<mailto:Lytle.Darren@epa.gov>]
Sent: Thursday, December 17, 2015 6:55 AM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: Quesion

Mike,

Could you provide me Flint distribution system water quality data going back maybe 3 years? I am interested in TCR sampling results, chlorine data, etc... I am interested in comparing historic data to the latest data albeit more extensive now as it comes in.

Thanks much, Darren

Darren A. Lytle, Ph.D., P.E.
 Branch Chief (Acting)
 U.S. Environmental Protection Agency
 26 West Martin Luther King Dr.
 Cincinnati, Ohio 45268
 Phone: (513) 569-7432
 Fax: (513) 487-2543
 email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4 . Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE
Team Leader



**Lockwood, Andrews
& Newnam, Inc.**

A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

2121 University Park Dr, Suite 100 • Okemos, MI 48864-6901

D 517.819.2367 **C** 517.819.2367

www.lan-inc.com • sfmatta@lan-inc.com

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Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, December 10, 2015 11:55 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint Boil water notice
Attachments: boil water localized detail.jpg; boil water notice City scale.jpg; Boil Water Notice signed.PDF

fyi

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Brent Wright [mailto:bwright@cityofflint.com]
Sent: Monday, August 18, 2014 8:58 AM
To: Prysby, Mike (DEQ)
Cc: Daugherty Johnson; Michael Glasgow
Subject: Fwd: Flint Boil water notice

Mike attached is the boil water notice and map of the effective area that was sent out the evening of Friday the 15th.

Thank you

----- Forwarded message -----

From: Brent Wright <bwright@cityofflint.com>
Date: Sat, Aug 16, 2014 at 10:40 AM
Subject: Fwd: Flint Boil water notice
To: Michael Glasgow <mglasgow@cityofflint.com>

----- Forwarded message -----

From: Daugherty Johnson <djohnson@cityofflint.com>
Date: Fri, Aug 15, 2014 at 10:24 PM
Subject: Fwd: Flint Boil water notice
To: Brent Wright <bwright@cityofflint.com>

Here's what I sent

----- Forwarded message -----

From: Daugherty Johnson <djohnson@cityofflint.com>
Date: Fri, Aug 15, 2014 at 10:19 PM
Subject: Flint Boil water notice
To: abc12news@abc12.com, news@nbc25.net, wnem@wnem.com, flnews@mlive.com, [GCHD-](#)

EHwater@gchd.us

Cc: Daugherty Johnson <djohnson@cityofflint.com>, Jason Lorenz <jlorenz@cityofflint.com>

I have attached a localized boil water notice for a portion of Flint. The maps and notice are attached. This is NOT a Citywide notice. It is anticipated this will be in effect until Monday due to testing duration. If your team has questions please call me at 577-8906.

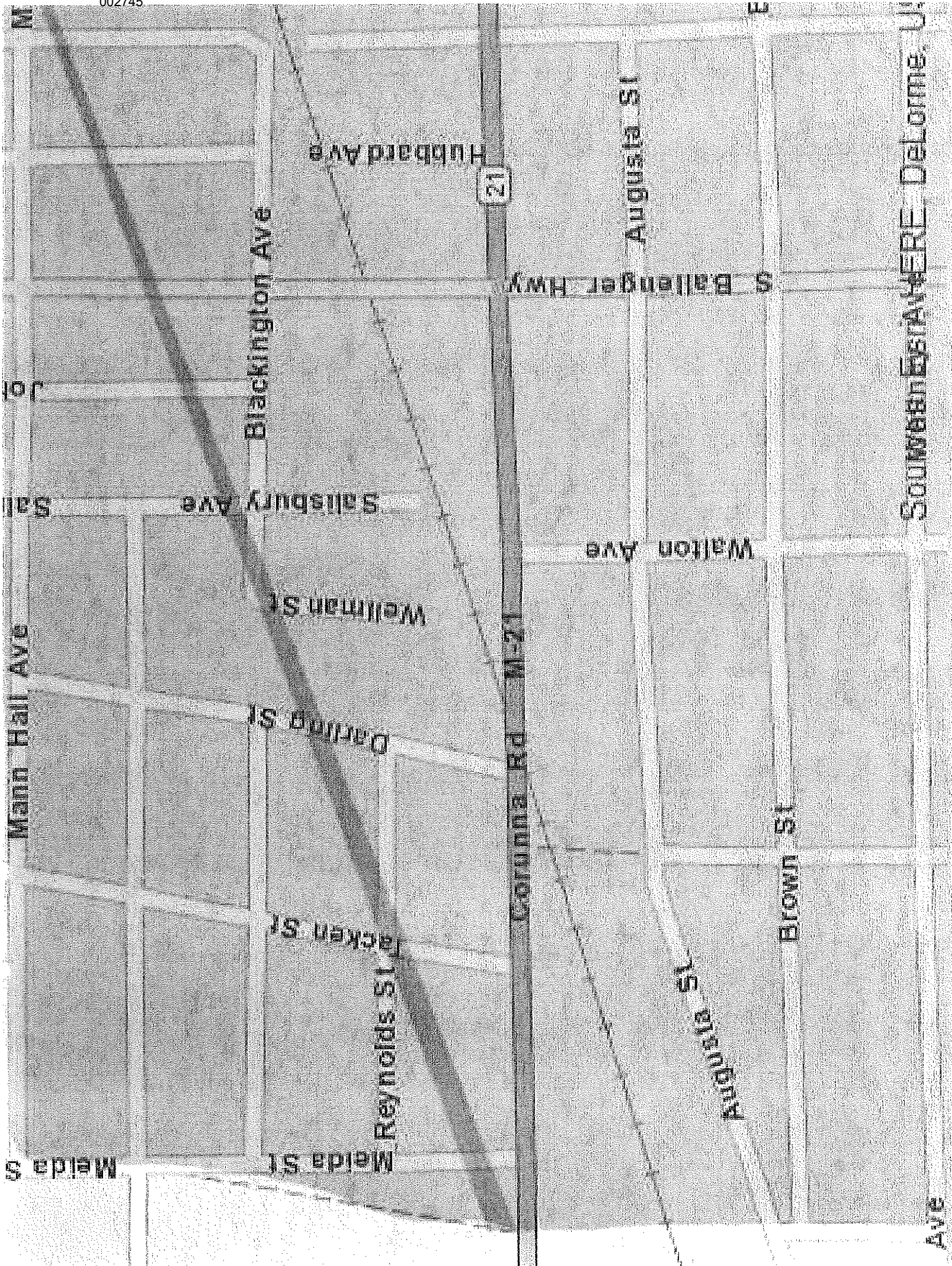
Thank you
Daugherty Johnson
Utilities Administrator
City of Flint

--

Brent Wright
Water Plant Supervisor
City of Flint
4500 N. Dort Hwy.
Flint, MI. 48505
Ph: 810.787.6537 ext. 3510
Fx: 810.787.3710

--

Brent Wright
Water Plant Supervisor
City of Flint
4500 N. Dort Hwy.
Flint, MI. 48505
Ph: 810.787.6537 ext. 3510
Fx: 810.787.3710



LOCALIZED DRINKING WATER WARNING

**A localized area of the City of Flint water is contaminated with fecal coliform
BOIL YOUR WATER BEFORE USING**

Fecal coliform bacteria were found in the water supply on August 14, 2014. These bacteria can make you sick, and are a particular concern for people with weakened immune systems.

What should I do? What does this mean?

DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST. Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and preparing food. Boiling kills bacteria and other organisms in the water. Continue using boiled or bottled water until further notice. This boil notice is limited to the area bordered by Mann Hall Ave. (North), Mann Ave. (East), Whitney Ave. (South) and the City limits (West).

This boil water notice is only for the affected area. The Water Treatment Plant tests verify that the overall system is operating within DEQ drinking water standards.

Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What happened? What is being done?

3 routine samples tested total coliform positive, repeat samples were also total coliform positive as well as 1 fecal coliform positive. We are increasing our chlorine levels and flushing the system. We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within a few days.

For more information, please contact Mr. Brent Wright of the City of Flint at 810-787-6537, bwright@cityofflint.com, 4500 North Dort Highway, Flint MI 48505 or Daugherty Johnson Utilities Administrator (810) 766-7135 ext 2602. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you as a precautionary measure by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature



Title PLANT SUPERVISOR

Date Distributed

8/15/2014

Reminder to water supplier: This notice / certification must be sent to the DNRE.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, December 10, 2015 10:17 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Lead crisis in Flint? Here are cities with even higher rates

fyi

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Sygo, Jim (DEQ)
Sent: Thursday, December 10, 2015 9:59 AM
To: Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: Fwd: Lead crisis in Flint? Here are cities with even higher rates

Interesting article

Sent from my iPhone

Begin forwarded message:

From: Bridge Magazine <info@thecenterformichigan.net>
Date: December 10, 2015 at 9:32:25 AM EST
To: <sygoj@michigan.gov>
Subject: Lead crisis in Flint? Here are cities with even higher rates
Reply-To: <info@thecenterformichigan.net>

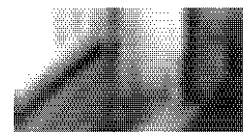


Forward to a friend

Bridge

**NEWS AND ANALYSIS FROM
THE CENTER FOR MICHIGAN**

**Far from Flint, lead remains an irreversible
scourge**



Lead poisoning rates have dropped dramatically in Michigan over the past decade. But in many cities and towns, child exposure rates far exceed those in Flint.

[READ FULL STORY](#)

Interactive map: Places with higher lead rates than Flint



Check out cities across Michigan with high lead exposure rates, as well as rates in your neighborhood

[READ FULL STORY](#)

Sink or swim: Higher education is key to Michigan's future

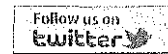


A new report by education, business, philanthropic and government leaders says Michigan's rise to an elite state depends on getting far more students to graduate from college or obtain a technical certificate after high school.

[READ FULL STORY](#)



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*The Center for Michigan • 4100 N Dixboro Rd • Ann Arbor MI 48105 •
(734)769-4625*

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Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, December 08, 2015 5:45 PM
To: Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Cc: Rennaker, Joanne (DEQ)
Subject: RE: e-mails

Mike and Adam,

We need to get this request completed on Wednesday. It shouldn't take long given the limited timeframe they are looking at.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, December 01, 2015 1:58 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Cc: Rennaker, Joanne (DEQ); Devereaux, Tracy Jo (DEQ); Anderson, Madhu (DEQ); Sygo, Jim (DEQ)
Subject: e-mails

Dr. Reynolds (Flint After Action Review Task Force) has requested copies of all e-mails sent or received between DEQ-ODWMA staff and City of Flint personnel over the two-plus weeks April 13, 2014 through April 30, 2014.

Please prepare these for sharing with Dr. Reynolds at your earliest convenience. Thanks.

Madhu – would you prefer to have these in hard copy or electronically?

Liane

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, December 02, 2015 12:42 PM
To: Antil, Jeffrey (DEQ); Brennan, Patrick (DEQ); Drake, Jerry (DEQ); Joseph, Mark (DEQ); Prysby, Mike (DEQ); Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Skinker, Bethel (DEQ); Swendsen, Kurt (DEQ)
Subject: DCDS Timesheets Thurs. 12/3

Please have your timesheets completed by COB on Thursday 12/3. I will approve timesheets on the morning of 12/4.

Those working on Flint please remember to use the activity tracking function.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, November 17, 2015 4:52 PM
To: Benzie, Richard (DEQ); Monosmith, Carrie (DEQ)
Cc: Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ); Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ)
Subject: FW: Environmental Assistance Center Calls Regarding Flint Drinking Water Issues
Importance: High

FYI. OEA's operator protocols are listed below.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Smith, Leslie (DEQ)
Sent: Tuesday, November 17, 2015 3:53 PM
To: DEQ-OEA-Compliance-Assistance
Cc: Tommasulo, Karen (DEQ); Busch, Stephen (DEQ); Schinderle, Jack (DEQ)
Subject: Environmental Assistance Center Calls Regarding Flint Drinking Water Issues
Importance: High

Good Afternoon Compliance Assistance Unit (CAU) Staff,

In the interest of providing the best possible customer service to callers inquiring about Flint Drinking Water matters, I have sought direction as to how the CAU is to handle these calls. After consultation with Amy this afternoon, the CAU will utilize the following call triage process until further notice:

1. For general calls (e.g. FAQs, water sampling, school test results, water filters, etc.), please direct callers to the following website for information: www.michigan.gov/flintwater. Additionally, CAU staff should also become familiar with the website's content in order to provide the best customer service.
2. For calls concerning any lawsuits regarding this matter, CAU staff are not to provide comments on these matters. These matters are being handled by the Michigan Attorney General's Office. (Karen T: Can you provide the CAU with a suggested script for addressing callers inquiring about the lawsuits being reported in the media?)
3. Media calls are to be directed to the Communications Office (Brad Wurfel).
4. For all other calls (e.g. technical nature), please direct callers to Joanne Rennaker, Secretary, Lansing District Office, Office of Drinking Water and Municipal Assistance. Ms. Rennaker will then direct callers to the appropriate Lansing District ODWMA staff person.

This is the process to be followed by CAU staff unless directed.

Thanks,

Mr. Leslie E. Smith, III

Compliance Assistance Specialist

And Liaison to the Remediation and Redevelopment Division

Office of Environmental Assistance

Michigan Department of Environmental Quality

e-mail: smithL9@michigan.gov

Phone: 517-284-6902

Hotline: 1-800-662-9278

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, November 12, 2015 10:27 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Technical Advisory Team Information

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Thursday, November 12, 2015 10:17 AM
To: 'John O'Brien'; 'Pete Levine'; 'Howard Croft'
Cc: 'Andy Leavitt'; 'Wright, Michael'; 'Amy Hovey'; 'Anthony Chubb'; 'Brent Wright'; 'Lytle, Darren'; 'Dayne Walling'; 'Deborah Higgins'; 'donna. cole'; Dykema, Linda D. (DHHS); Wells, Eden (DHHS); Krisztian, George (DEQ); 'Gerald (Jed) Natzke'; 'James Henry'; 'Jamie Gaskin'; 'Jason Lorenz'; 'jmikewright'; 'JoAnne Herman'; 'Kevin J. Keane'; 'Kirk Smith'; larry.koehler@mcc.edu; 'Laura Sullivan'; 'Lawrence Reynolds'; 'Lawrence Reynolds'; 'Michael Glasgow'; 'Schock, Michael'; 'Mike Lane'; Prysby, Mike (DEQ); MVALACAK@gchd.us; 'Natasha Henderson'; 'Norb Birchmeier'; 'Robert Bincsik'; rosejo@msu.edu; 'Russell Hudson'; 'Samir Matta'; 'Sean Kammer'; 'Shawn Patrick McElmurry'; Busch, Stephen (DEQ); swalser@senatedems.org; Thompson, Sheryl D. (DHHS); 'Warren Green'
Subject: RE: Technical Advisory Team Information

It is my understanding that this is a water system technical advisory team. Is that correct?

And the larger group has been formed, because the state of Michigan has been breaking Federal law since April 2014, triggering a massive lead in water problem in Flint that they are covering up to the present day. The cover-up includes the repeated claim (not once retracted) that Flint has always met the provisions of the lead and copper rule, their use of methods of testing for lead that do not find lead in water problems, and throwing out samples with high lead to skew results.

As far as I know, no federal laws were broken relative to lead paint and lead from demolitions, and Flint's existing programs were having success in address those issues until the switch. So as an outsider, I too, am completely perplexed at the amount of time spent on those issues.

I am also perplexed at all the discussion on how to re-build trust with the community, when some of the state agencies involved are still not worthy of the public's trust, as evidenced by word and deed.

Marc

From: John O'Brien [mailto:jfobrien@gcdcwws.com]
Sent: Thursday, November 12, 2015 8:45 AM
To: 'Pete Levine'; Howard Croft
Cc: Andy Leavitt; Marc Edwards; Wright, Michael; Amy Hovey; Anthony Chubb; Brent Wright; Lytle, Darren; Dayne

Walling; Deborah Higgins; donna. cole; dykemal; Eden Wells (DHHS); George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; Kevin J. Keane; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Schock, Michael; Mike Lane; Mike Prysby (DEQ); MVALACAK@gchd.us; Natasha Henderson; Norb Birchmeier; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Shawn Patrick McElmurry; Stephen Busch (DEQ); swalser@senatedems.org; thompsons2@michigan.gov; Warren Green

Subject: RE: Technical Advisory Team Information

We are not trying to deflect the issue. Is the goal to reduce blood lead levels in the population or to ride the Flint water mistake to a virtual end?

From: Pete Levine [<mailto:plevine@gcms.org>]

Sent: Wednesday, November 11, 2015 9:49 AM

To: Howard Croft <hcroft@cityofflint.com>

Cc: Andy Leavitt <aleavitt@senatedems.org>; Marc Edwards <edwardsm@vt.edu>; Wright, Michael <Wright.Michael@epa.gov>; Amy Hovey <Amy.Hovey@mail.house.gov>; Anthony Chubb <achubb@cityofflint.com>; Brent Wright <bwright@cityofflint.com>; Lytle, Darren <Lytle.Darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; Deborah Higgins <DeborahC@mottchc.org>; donna. cole <donna.cole@genesys.org>; dykemal <dykemal@mich.gov>; Eden Wells (DHHS) <wellse3@michigan.gov>; George Krisztian (DEQ) <krisztian@michigan.gov>; Gerald (Jed) Natzke <gdn2@aol.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesee.org>; Jason Lorenz <jlorenz@cityofflint.com>; jmikewright <jmikewright@yahoo.com>; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kevin J. Keane <KEVIN.KEANE@cmsenergy.com>; Kirk Smith <ksmith@flint.org>; larry.koehler@mcc.edu; Laura Sullivan <dr.laura2@gmail.com>; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Schock, Michael <Schock.Michael@epa.gov>; Mike Lane <mjlane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; MVALACAK@gchd.us; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo@msu.edu; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; Sean Kammer <skammer@cityofflint.com>; Shawn Patrick McElmurry <s.mcelmurry@wayne.edu>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; swalser@senatedems.org; thompsons2@michigan.gov; Warren Green <jwgreen@lan-inc.com>

Subject: Re: Technical Advisory Team Information

I also think it is important for folks to stop trying to deflect this crisis into a general lead abatement discussion.



This email has been sent from a virus-free computer protected by Avast.
www.avast.com

Peter A. Levine, MPH
Executive Director
Genesee County Medical Society
4438 Oak Bridge Dr. Suite B
Flint, Mi. 48532
Phone: 810-7339925
Fax: 810-2303737
[email:plevine@gcms.org](mailto:plevine@gcms.org)

On Tue, Nov 10, 2015 at 6:57 PM, Howard Croft <hcroft@cityofflint.com> wrote:

Andy,

We just recently converted to the new method with no flushing, the vast majority were done with the old procedure. Our original expectation focused on the thought of a new standard being put in place statewide for uniformity but eventually, through conversations with Darren Lytle we made the decision to convert in advance of any potential statewide changes.

On Tue, Nov 10, 2015 at 6:40 PM, Andy Leavitt <aleavitt@senatedems.org> wrote:

Howard,

For clarity, of those hundreds of samples how many are with the flawed sampling method and how many are done with the appropriate sampling method?

Thanks,

Andy

On Tue, Nov 10, 2015 at 6:36 PM Howard Croft <hcroft@cityofflint.com> wrote:

Marc,

I believe that we agree with that message, we are planing to pursue all of the people who were sampled under the previous protocol and request that they submit to another round of testing with the new procedures. We have generated hundreds of samples this year and we intend to aggressively reach out to everyone for retesting. We are building a campaign that will continue to caution people about taking safe measures for drinking water but also produces neighborhood sampling pools that test several times throughout the course of the year in addition to tier 1 pools.

On Tue, Nov 10, 2015 at 5:14 PM, Marc Edwards <edwardsm@vt.edu> wrote:

No one should be told that if their water tested safe using the old MDEQ protocol, that it is ok to drink. I thought we learned that lesson already. The old sampling protocol is flawed.

Best Regards,

Marc

From: Howard Croft [mailto:hcroft@cityofflint.com]

Sent: Tuesday, November 10, 2015 4:56 PM

To: Andy Leavitt

Cc: Wright, Michael; Amy Hovey; Anthony Chubb; Brent Wright; Lytle, Darren; Dayne Walling; Deborah Higgins; donna. cole; dykemal; Eden Wells (DHHS); edwardsm; George Krisztian (DEQ); Gerald (Jed) Natzke; James Henry; Jamie Gaskin; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kevin J. Keane; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Lawrence Reynolds; Lawrence Reynolds; Michael Glasgow; Schock, Michael; Mike Lane; Mike Prysby (DEQ); MVALACAK@gchd.us; Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Shawn Patrick McElmurry; Stephen Busch (DEQ); swalser@senatedems.org; thompsons2@michigan.gov; Warren Green

Subject: Re: Technical Advisory Team Information

Andy,

We changed the instructions late last week that called for flushing, all bottles are now going out with the new protocol attached. We are concerned that some people are still not removing filters from the tap so we are trying to focus on that aspect of communication as well..

On Tue, Nov 10, 2015 at 1:59 PM, Andy Leavitt <aleavitt@senatedems.org> wrote:

Hi Howard,

Can you confirm when Flint will move away from the testing mode that includes flushing?

Thanks,

Andy

On Mon, Nov 9, 2015 at 6:20 PM Wright, Michael <Wright.Michael@epa.gov> wrote:

Howard:

Thanks for arranging the meeting today. I didn't catch all of what Natasha (and others) said on the line but I was intrigued when I heard her mention a fact sheet or some information on Lead that was taken from a city in MA. Can you/she forward that URL for our review and consideration?

During the last call, I also noted my concern regarding boil advisories during a lead emergency and wanted to provide a link that documented what I said about Lead (and nitrates for that matter) being concentrated upon heating.

http://water.epa.gov/drink/guide/upload/book_waterontap_full.pdf

Lastly, I couldn't hear who made the comment, but I agree that infants are likely the most vulnerable of concern. So, I was wondering if the clinicians/health practitioners in the room might consider partnering or spearheading an outreach effort to target expectant mothers with the Filters that are being provided. Not sure if this is best done via prenatal clinics, delivery hospitals, OB-GYN departments, or lactation management

specialists, etc. The public health practitioners might also be able to use this emergency as another reason to advocate breastfeeding (vs infant formula).

Thanks,
Mike

From: Howard Croft [mailto:hcroft@cityofflint.com]

Sent: Friday, November 06, 2015 3:48 PM

To: Amy Hovey <Amy.Hovey@mail.house.gov>; Andy Leavitt <aleavitt@senatedems.org>; Anthony Chubb <achubb@cityofflint.com>; Brent Wright <bwright@cityofflint.com>; Lytle, Darren <Lytle.Darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; Deborah Higgins <DeborahC@mottchc.org>; donna. cole <donna.cole@genesys.org>; dykema <dykema@mich.gov>; Eden Wells (DHHS) <wellse3@michigan.gov>; edwardsm <edwardsm@vt.edu>; George Krisztian (DEQ) <krisztian@michigan.gov>; Gerald (Jed) Natzke <gdn2@aol.com>; Howard Croft <hcroft@cityofflint.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesees.org>; Jason Lorenz <jlorenz@cityofflint.com>; jmikewright <jmikewright@yahoo.com>; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kevin J. Keane <KEVIN.KEANE@cmsenergy.com>; Kirk Smith <ksmith@flint.org>; larry.koehler@mcc.edu; Laura Sullivan <dr.laura2@gmail.com>; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Schock, Michael <Schock.Michael@epa.gov>; Wright, Michael <Wright.Michael@epa.gov>; Mike Lane <milane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; MVALACAK@gchd.us; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Pete Levine <plevine@gcms.org>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo@msu.edu; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; Sean Kammer <skammer@cityofflint.com>; Shawn Patrick McElmurry <s.mcelmurry@wayne.edu>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; swalser@senatedems.org; thompsons2@michigan.gov; Warren Green <jwgreen@lan-inc.com>

Subject: Technical Advisory Team Information

All,

Enclosed please find the weekly update along with the agenda for next weeks Technical Advisory Committee meeting. The time and location remain at City Hall on the 3rd floor at 2:00 pm. There is a conference call in number available and we have modified the speaker system to accommodate all those who call in. If there are any questions, please do not hesitate to contact me.

Dial-in Number: (641) 715-3580

Access Code: 373-510

PIN: 1234

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

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--

Howard Croft

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Howard Croft
Public Works Director
City of Flint
1101 S. Saginaw Street
Flint, MI 48502
PH# 810.766.7135 Ext.2043
hcroft@cityofflint.com

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, October 29, 2015 8:22 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint Home Owner's Lead data thru October 28, 2015
Attachments: Flint Home Owners Data Thru October 28,2015.xlsx

Adam,

Can you double check this to make sure we have the same data as George.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Krisztian, George (DEQ)
Sent: Wednesday, October 28, 2015 4:53 PM
To: Sygo, Jim (DEQ); Wyant, Dan (DEQ); Wurfel, Brad (DEQ); Tommasulo, Karen (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Thelen, Mary Beth (DEQ); Shaler, Karen (DEQ)
Subject: Flint Home Owner's Lead data thru October 28, 2015

Attached is the latest data for Homeowner's in Flint. The spreadsheet includes samples submitted to the DEQ Lab from September 3rd thru October 26th.

- Of the 306 samples, 238 (77.7%) were at levels of 5ppb and lower for lead
- The 90th percentile value is 10 ppb

George

George L. Krisztian
 Flint Action Plan Coordinator
 Laboratory Director
 Michigan Department of Environmental Quality
 Desk ph (517) 284-6719
 Cell ph (517) 420-5897

SAMPNO	Contact	SUBDATE	ACODE	RESULT
LF84899	MIKE GLASGOW	25-Sep-15	PB	0.000
LF85330	MIKE GLASGOW	29-Sep-15	PB	0.000
LF85604	MIKE GLASGOW	30-Sep-15	PB	0.000
LF85613	MIKE GLASGOW	30-Sep-15	PB	0.000
LF85796	MIKE GLASGOW	01-Oct-15	PB	0.000
LF85797	MIKE GLASGOW	01-Oct-15	PB	0.000
LF85799	MIKE GLASGOW	01-Oct-15	PB	0.000
LF85802	MIKE GLASGOW	01-Oct-15	PB	0.000
LF85862	MIKE GLASGOW	01-Oct-15	PB	0.000
LF85931	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85933	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85936	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85945	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85947	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85954	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85957	MIKE GLASGOW	02-Oct-15	PB	0.000
LF85960	MIKE GLASGOW	02-Oct-15	PB	0.000
LF87007	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87012	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87022	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87023	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87024	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87025	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87029	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87030	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87031	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87032	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87033	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87035	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87037	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87045	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87047	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87050	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87051	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87054	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87061	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87064	MIKE GLASGOW	08-Oct-15	PB	0.000
LF87365	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87369	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87370	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87372	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87378	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87379	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87383	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87386	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87392	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87394	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87395	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87397	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87398	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87405	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87415	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87418	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87419	MIKE GLASGOW	13-Oct-15	PB	0.000

LF87423	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87428	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87431	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87432	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87434	MIKE GLASGOW	13-Oct-15	PB	0.000
LF87927	MIKE GLASGOW	16-Oct-15	PB	0.000
LF87929	MIKE GLASGOW	16-Oct-15	PB	0.000
LF87932	MIKE GLASGOW	16-Oct-15	PB	0.000
LF87938	MIKE GLASGOW	16-Oct-15	PB	0.000
LF87942	MIKE GLASGOW	16-Oct-15	PB	0.000
LF87946	MIKE GLASGOW	16-Oct-15	PB	0.000
LF88280	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88281	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88283	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88284	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88285	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88286	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88292	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88293	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88295	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88296	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88298	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88302	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88306	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88308	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88309	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88310	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88313	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88316	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88317	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88318	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88319	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88323	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88325	MIKE GLASGOW	20-Oct-15	PB	0.000
LF88950	MIKE GLASGOW	26-Oct-15	PB	0.000
LF88952	MIKE GLASGOW	26-Oct-15	PB	0.000
LF88953	MIKE GLASGOW	26-Oct-15	PB	0.000
LF88956	MIKE GLASGOW	26-Oct-15	PB	0.000
LF88973	MIKE GLASGOW	26-Oct-15	PB	0.000
LF82709	MIKE GLASGOW	15-Sep-15	PB	0.001
LF84317	MIKE GLASGOW	23-Sep-15	PB	0.001
LF84896	MIKE GLASGOW	25-Sep-15	PB	0.001
LF85605	MIKE GLASGOW	30-Sep-15	PB	0.001
LF85608	MIKE GLASGOW	30-Sep-15	PB	0.001
LF85800	MIKE GLASGOW	01-Oct-15	PB	0.001
LF85934	MIKE GLASGOW	02-Oct-15	PB	0.001
LF85937	MIKE GLASGOW	02-Oct-15	PB	0.001
LF85939	MIKE GLASGOW	02-Oct-15	PB	0.001
LF85942	MIKE GLASGOW	02-Oct-15	PB	0.001
LF85951	MIKE GLASGOW	02-Oct-15	PB	0.001
LF85959	MIKE GLASGOW	02-Oct-15	PB	0.001
LF87013	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87015	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87016	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87028	MIKE GLASGOW	08-Oct-15	PB	0.001

LF87044	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87046	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87053	MIKE GLASGOW	08-Oct-15	PB	0.001
LF87367	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87380	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87382	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87384	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87411	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87417	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87424	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87427	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87433	MIKE GLASGOW	13-Oct-15	PB	0.001
LF87930	MIKE GLASGOW	16-Oct-15	PB	0.001
LF88278	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88290	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88291	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88297	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88299	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88304	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88305	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88312	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88315	MIKE GLASGOW	20-Oct-15	PB	0.001
LF88959	MIKE GLASGOW	26-Oct-15	PB	0.001
LF88965	MIKE GLASGOW	26-Oct-15	PB	0.001
LF81254	MIKE GLASGOW	03-Sep-15	PB	0.002
LF82707	MIKE GLASGOW	15-Sep-15	PB	0.002
LF84313	MIKE GLASGOW	23-Sep-15	PB	0.002
LF84900	MIKE GLASGOW	25-Sep-15	PB	0.002
LF85291	MIKE GLASGOW	29-Sep-15	PB	0.002
LF85601	MIKE GLASGOW	30-Sep-15	PB	0.002
LF85606	MIKE GLASGOW	30-Sep-15	PB	0.002
LF85610	MIKE GLASGOW	30-Sep-15	PB	0.002
LF85612	MIKE GLASGOW	30-Sep-15	PB	0.002
LF85795	MIKE GLASGOW	01-Oct-15	PB	0.002
LF85858	MIKE GLASGOW	01-Oct-15	PB	0.002
LF85861	MIKE GLASGOW	01-Oct-15	PB	0.002
LF85932	MIKE GLASGOW	02-Oct-15	PB	0.002
LF85946	MIKE GLASGOW	02-Oct-15	PB	0.002
LF85950	MIKE GLASGOW	02-Oct-15	PB	0.002
LF85958	MIKE GLASGOW	02-Oct-15	PB	0.002
LF87020	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87026	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87027	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87049	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87059	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87063	MIKE GLASGOW	08-Oct-15	PB	0.002
LF87368	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87376	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87381	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87391	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87393	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87400	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87404	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87408	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87410	MIKE GLASGOW	13-Oct-15	PB	0.002

LF87413	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87420	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87422	MIKE GLASGOW	13-Oct-15	PB	0.002
LF87933	MIKE GLASGOW	16-Oct-15	PB	0.002
LF87934	MIKE GLASGOW	16-Oct-15	PB	0.002
LF87935	MIKE GLASGOW	16-Oct-15	PB	0.002
LF87944	MIKE GLASGOW	16-Oct-15	PB	0.002
LF88288	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88294	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88303	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88314	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88321	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88324	MIKE GLASGOW	20-Oct-15	PB	0.002
LF88958	MIKE GLASGOW	26-Oct-15	PB	0.002
LF88971	MIKE GLASGOW	26-Oct-15	PB	0.002
LF85285	MIKE GLASGOW	29-Sep-15	PB	0.003
LF85288	MIKE GLASGOW	29-Sep-15	PB	0.003
LF85614	MIKE GLASGOW	30-Sep-15	PB	0.003
LF85857	MIKE GLASGOW	01-Oct-15	PB	0.003
LF85930	MIKE GLASGOW	02-Oct-15	PB	0.003
LF85938	MIKE GLASGOW	02-Oct-15	PB	0.003
LF85952	MIKE GLASGOW	02-Oct-15	PB	0.003
LF87014	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87017	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87039	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87041	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87055	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87058	MIKE GLASGOW	08-Oct-15	PB	0.003
LF87364	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87371	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87377	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87402	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87409	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87414	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87425	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87430	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87436	MIKE GLASGOW	13-Oct-15	PB	0.003
LF87947	MIKE GLASGOW	16-Oct-15	PB	0.003
LF88957	MIKE GLASGOW	26-Oct-15	PB	0.003
LF82708	MIKE GLASGOW	15-Sep-15	PB	0.004
LF85603	MIKE GLASGOW	30-Sep-15	PB	0.004
LF85609	MIKE GLASGOW	30-Sep-15	PB	0.004
LF85615	MIKE GLASGOW	30-Sep-15	PB	0.004
LF85944	MIKE GLASGOW	02-Oct-15	PB	0.004
LF85953	MIKE GLASGOW	02-Oct-15	PB	0.004
LF87010	MIKE GLASGOW	08-Oct-15	PB	0.004
LF87057	MIKE GLASGOW	08-Oct-15	PB	0.004
LF87387	MIKE GLASGOW	13-Oct-15	PB	0.004
LF87421	MIKE GLASGOW	13-Oct-15	PB	0.004
LF87435	MIKE GLASGOW	13-Oct-15	PB	0.004
LF87943	MIKE GLASGOW	16-Oct-15	PB	0.004
LF88301	MIKE GLASGOW	20-Oct-15	PB	0.004
LF88320	MIKE GLASGOW	20-Oct-15	PB	0.004
LF88949	MIKE GLASGOW	26-Oct-15	PB	0.004
LF88951	MIKE GLASGOW	26-Oct-15	PB	0.004

LF88955	MIKE GLASGOW	26-Oct-15	PB	0.004
LF88961	MIKE GLASGOW	26-Oct-15	PB	0.004
LF82706	MIKE GLASGOW	15-Sep-15	PB	0.005
LF84314	MIKE GLASGOW	23-Sep-15	PB	0.005
LF85856	MIKE GLASGOW	01-Oct-15	PB	0.005
LF85863	MIKE GLASGOW	01-Oct-15	PB	0.005
LF85943	MIKE GLASGOW	02-Oct-15	PB	0.005
LF87011	MIKE GLASGOW	08-Oct-15	PB	0.005
LF87019	MIKE GLASGOW	08-Oct-15	PB	0.005
LF87062	MIKE GLASGOW	08-Oct-15	PB	0.005
LF87374	MIKE GLASGOW	13-Oct-15	PB	0.005
LF87388	MIKE GLASGOW	13-Oct-15	PB	0.005
LF87412	MIKE GLASGOW	13-Oct-15	PB	0.005
LF87931	MIKE GLASGOW	16-Oct-15	PB	0.005
LF87936	MIKE GLASGOW	16-Oct-15	PB	0.005
LF87941	MIKE GLASGOW	16-Oct-15	PB	0.005
LF87945	MIKE GLASGOW	16-Oct-15	PB	0.005
LF88311	MIKE GLASGOW	20-Oct-15	PB	0.005
LF88972	MIKE GLASGOW	26-Oct-15	PB	0.005
LF84898	MIKE GLASGOW	25-Sep-15	PB	0.006
LF85290	MIKE GLASGOW	29-Sep-15	PB	0.006
LF85602	MIKE GLASGOW	30-Sep-15	PB	0.006
LF85801	MIKE GLASGOW	01-Oct-15	PB	0.006
LF85859	MIKE GLASGOW	01-Oct-15	PB	0.006
LF87009	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87021	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87042	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87043	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87048	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87056	MIKE GLASGOW	08-Oct-15	PB	0.006
LF87385	MIKE GLASGOW	13-Oct-15	PB	0.006
LF87407	MIKE GLASGOW	13-Oct-15	PB	0.006
LF88282	MIKE GLASGOW	20-Oct-15	PB	0.006
LF84315	MIKE GLASGOW	23-Sep-15	PB	0.007
LF85798	MIKE GLASGOW	01-Oct-15	PB	0.007
LF85940	MIKE GLASGOW	02-Oct-15	PB	0.007
LF85955	MIKE GLASGOW	02-Oct-15	PB	0.007
LF87036	MIKE GLASGOW	08-Oct-15	PB	0.007
LF87375	MIKE GLASGOW	13-Oct-15	PB	0.007
LF87389	MIKE GLASGOW	13-Oct-15	PB	0.007
LF87406	MIKE GLASGOW	13-Oct-15	PB	0.007
LF88322	MIKE GLASGOW	20-Oct-15	PB	0.007
LF85286	MIKE GLASGOW	29-Sep-15	PB	0.008
LF87018	MIKE GLASGOW	08-Oct-15	PB	0.008
LF87034	MIKE GLASGOW	08-Oct-15	PB	0.008
LF87038	MIKE GLASGOW	08-Oct-15	PB	0.008
LF87928	MIKE GLASGOW	16-Oct-15	PB	0.008
LF88279	MIKE GLASGOW	20-Oct-15	PB	0.008
LF88289	MIKE GLASGOW	20-Oct-15	PB	0.008
LF85949	MIKE GLASGOW	02-Oct-15	PB	0.009
LF85956	MIKE GLASGOW	02-Oct-15	PB	0.009
LF87060	MIKE GLASGOW	08-Oct-15	PB	0.009
LF87065	MIKE GLASGOW	08-Oct-15	PB	0.009
LF85289	MIKE GLASGOW	29-Sep-15	PB	0.010
LF85941	MIKE GLASGOW	02-Oct-15	PB	0.010

LF87008	MIKE GLASGOW	08-Oct-15	PB	0.010
LF87401	MIKE GLASGOW	13-Oct-15	PB	0.010
LF87937	MIKE GLASGOW	16-Oct-15	PB	0.010
LF85929	MIKE GLASGOW	02-Oct-15	PB	0.011
LF87052	MIKE GLASGOW	08-Oct-15	PB	0.011
LF87939	MIKE GLASGOW	16-Oct-15	PB	0.011
LF85607	MIKE GLASGOW	30-Sep-15	PB	0.012
LF85287	MIKE GLASGOW	29-Sep-15	PB	0.013
LF87429	MIKE GLASGOW	13-Oct-15	PB	0.013
LF87373	MIKE GLASGOW	13-Oct-15	PB	0.014
LF88287	MIKE GLASGOW	20-Oct-15	PB	0.015
LF87940	MIKE GLASGOW	16-Oct-15	PB	0.016
LF87366	MIKE GLASGOW	13-Oct-15	PB	0.017
LF87396	MIKE GLASGOW	13-Oct-15	PB	0.017
LF85935	MIKE GLASGOW	02-Oct-15	PB	0.018
LF85329	MIKE GLASGOW	29-Sep-15	PB	0.019
LF87390	MIKE GLASGOW	13-Oct-15	PB	0.019
LF84316	MIKE GLASGOW	23-Sep-15	PB	0.020
LF87416	MIKE GLASGOW	13-Oct-15	PB	0.020
LF87399	MIKE GLASGOW	13-Oct-15	PB	0.021
LF88307	MIKE GLASGOW	20-Oct-15	PB	0.026
LF87403	MIKE GLASGOW	13-Oct-15	PB	0.027
LF81253	MIKE GLASGOW	03-Sep-15	PB	0.028
LF85948	MIKE GLASGOW	02-Oct-15	PB	0.030
LF88954	MIKE GLASGOW	26-Oct-15	PB	0.036
LF85860	MIKE GLASGOW	01-Oct-15	PB	0.041
LF87040	MIKE GLASGOW	08-Oct-15	PB	0.074
LF85611	MIKE GLASGOW	30-Sep-15	PB	0.075
LF87426	MIKE GLASGOW	13-Oct-15	PB	0.078
LF88300	MIKE GLASGOW	20-Oct-15	PB	0.088
LF88960	MIKE GLASGOW	26-Oct-15	PB	0.131
LF84897	MIKE GLASGOW	25-Sep-15	PB	0.327

REPADD1	REPADD2	REPADD3	INVADD1	INVADD2	INVADD3
4500 N DORT HWY		FLINT	1930	FLINT	48503
4500 N DORT HWY		FLINT	1505 W	FLINT	48503
4500 N DORT HWY		FLINT	605	FLINT	48503
4500 N DORT HWY		FLINT	4307	FLINT	48507
4500 N DORT HWY		FLINT	2422	FLINT	48504
4500 N DORT HWY		FLINT	3729	FLINT	48506
4500 N DORT HWY		FLINT	3617	FLINT	48506
4500 N DORT HWY		FLINT	1222	FLINT	48507
4500 N DORT HWY		FLINT	605	FLINT	48503
4500 N DORT HWY		FLINT	1359	FLINT	48504
4500 N DORT HWY		FLINT	3701 N	FLINT	48506
4500 N DORT HWY		FLINT	1359	FLINT	48504
4500 N DORT HWY		FLINT	G3139	FLINT	48532
4500 N DORT HWY		FLINT	G3139	FLINT	48532
4500 N DORT HWY		FLINT	23009	FLINT	48503
4500 N DORT HWY		FLINT	1001	FLINT	48503
4500 N DORT HWY		FLINT	2309	FLINT	48503
4500 N DORT HWY		FLINT	G3376	FLINT	
4500 N DORT HWY		FLINT	1107 BEARD	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	211 W	FLINT	48503
4500 N DORT HWY		FLINT	2013	FLINT	48506
4500 N DORT HWY		FLINT	3447 BARTH	FLINT	48504
4500 N DORT HWY		FLINT	2309	FLINT	48506
4500 N DORT HWY		FLINT	3701	FLINT	48506
4500 N DORT HWY		FLINT	3807 N	FLINT	48506
4500 N DORT HWY		FLINT	3310 E	FLINT	48506
4500 N DORT HWY		FLINT	5813	FLINT	48504
4500 N DORT HWY		FLINT	3810	FLINT	48532
4500 N DORT HWY		FLINT			
4500 N DORT HWY		FLINT	1101 S	FLINT	48502
4500 N DORT HWY		FLINT	3713	FLINT	48506
4500 N DORT HWY		FLINT	4123	FLINT	48506
4500 N DORT HWY		FLINT	4500 N	FLINT	48505
4500 N DORT HWY		FLINT	3514	FLINT	48503
4500 N DORT HWY		FLINT	336	FLINT	
4500 N DORT HWY		FLINT	1160	FLINT	48504
4500 N DORT HWY		FLINT	414	FLINT	48503
4500 N DORT HWY		FLINT	3800	FLINT	
4500 N DORT HWY		FLINT	822 FRANK	FLINT	48504
4500 N DORT HWY		FLINT	2516	FLINT	48504
4500 N DORT HWY		FLINT	3224 N	FLINT	48506
4500 N DORT HWY		FLINT	3741 JOAL	FLINT	48506
4500 N DORT HWY		FLINT	1401	FLINT	48503
4500 N DORT HWY		FLINT	902 E	FLINT	48503
4500 N DORT HWY		FLINT	820	FLINT	48505
4500 N DORT HWY		FLINT	1160	FLINT	48504

4500 N DORT HWY	FLINT	318 BEDE ST	FLINT	48507
4500 N DORT HWY	FLINT	2701	FLINT	48506
4500 N DORT HWY	FLINT	3807 N	FLINT	48506
4500 N DORT HWY	FLINT	1809	FLINT	48503
4500 N DORT HWY	FLINT	3610	FLINT	48506
4500 N DORT HWY	FLINT	1101 S	FLINT	48502
4500 N DORT HWY	FLINT	4910	FLINT	48505
4500 N DORT HWY	FLINT	6707	FLINT	48505
4500 N DORT HWY	FLINT	2565	FLINT	48504
4500 N DORT HWY	FLINT	1920	FLINT	48503
4500 N DORT HWY	FLINT	1221 S	FLINT	
4500 N DORT HWY	FLINT	714 ELLAND	FLINT	
4500 N DORT HWY	FLINT	924 BARRIE	FLINT	48507
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	422 S	FLINT	48503
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	1700 S	FLINT	48504
4500 N DORT HWY	FLINT	1856 S	FLINT	48503
4500 N DORT HWY	FLINT	341	FLINT	48507
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	801	FLINT	48503
4500 N DORT HWY	FLINT	225 W	FLINT	48503
4500 N DORT HWY	FLINT	1201	FLINT	48503
4500 N DORT HWY	FLINT	1001	FLINT	48504
4500 N DORT HWY	FLINT	1025	FLINT	48503
4500 N DORT HWY	FLINT		FLINT	
4500 N DORT HWY	FLINT	3513	FLINT	48506
4500 N DORT HWY	FLINT	704	FLINT	48503
4500 N DORT HWY	FLINT	2607	FLINT	48504
4500 N DORT HWY	FLINT	401	FLINT	48507
4500 N DORT HWY	FLINT	1939	FLINT	48507
4500 N DORT HWY	FLINT	2426	FLINT	48504
4500 N DORT HWY	FLINT	2708	FLINT	48503
4500 N DORT HWY	FLINT	4214	FLINT	48504
4500 N DORT HWY	FLINT	612 E 3RD	FLINT	48503
4500 N DORT HWY	FLINT	G3139	FLINT	48532
4500 N DORT HWY	FLINT	927	FLINT	48503
4500 N DORT HWY	FLINT	540 S	FLINT	48502
4500 N DORT HWY	FLINT	3106	FLINT	48504
4500 N DORT HWY	FLINT	211 W	FLINT	48503
4500 N DORT HWY	FLINT	211 W	FLINT	48503
4500 N DORT HWY	FLINT	337	FLINT	48507
4500 N DORT HWY	FLINT	901 W	FLINT	48503
4500 N DORT HWY	FLINT	1305	FLINT	48502
4500 N DORT HWY	FLINT	2938	FLINT	48503
4500 N DORT HWY	FLINT	3409 SANTA	FLINT	48504
4500 N DORT HWY	FLINT	3214 N	FLINT	48506
4500 N DORT HWY	FLINT	360	FLINT	48507
4500 N DORT HWY	FLINT	3840	FLINT	48503
4500 N DORT HWY	FLINT	1310	FLINT	48504
4500 N DORT HWY	FLINT	3156	FLINT	48506
4500 N DORT HWY	FLINT	3200	FLINT	48506
4500 N DORT HWY	FLINT	1805	FLINT	48503

4500 N DORT HWY	FLINT	359	FLINT	48507
4500 N DORT HWY	FLINT	1622 E	FLINT	48506
4500 N DORT HWY	FLINT	3011 N	FLINT	48506
4500 N DORT HWY	FLINT	1906 E	FLINT	48503
4500 N DORT HWY	FLINT	116 W	FLINT	48503
4500 N DORT HWY	FLINT	2302	FLINT	48503
4500 N DORT HWY	FLINT	929	FLINT	48502
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	1914	FLINT	48507
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	1409	FLINT	
4500 N DORT HWY	FLINT	2820 S	FLINT	48503
4500 N DORT HWY	FLINT	325	FLINT	48503
4500 N DORT HWY	FLINT	726	FLINT	48503
4500 N DORT HWY	FLINT	502 CRAPO	FLINT	48503
4500 N DORT HWY	FLINT	3216	FLINT	48503
4500 N DORT HWY	FLINT	926	FLINT	48503
4500 N DORT HWY	FLINT	528 S	FLINT	48503
4500 N DORT HWY	FLINT	1206	FLINT	48503
4500 N DORT HWY	FLINT	2207 HILLS	FLINT	48503
4500 N DORT HWY	FLINT	3014	FLINT	48504
4500 N DORT HWY	FLINT	1002	FLINT	48503
4500 N DORT HWY	FLINT	2131	FLINT	48503
4500 N DORT HWY	FLINT	2602	FLINT	48507
4500 N DORT HWY	FLINT	1651 N	FLINT	48503
4500 N DORT HWY	FLINT	1901 E 2ND	FLINT	48503
4500 N DORT HWY	FLINT	3709	FLINT	48506
4500 N DORT HWY	FLINT	423 S	FLINT	48503
4500 N DORT HWY	FLINT	3010	FLINT	48506
4500 N DORT HWY	FLINT	3719 KENT	FLINT	48503
4500 N DORT HWY	FLINT	1830	FLINT	48503
4500 N DORT HWY	FLINT	2250	FLINT	48504
4500 N DORT HWY	FLINT	340	FLINT	
4500 N DORT HWY	FLINT	1106	FLINT	48503
4500 N DORT HWY	FLINT	1025 E	FLINT	
4500 N DORT HWY	FLINT	2020	FLINT	48504
4500 N DORT HWY	FLINT	801 FLORAL	FLINT	48503
4500 N DORT HWY	FLINT	3110	FLINT	48503
4500 N DORT HWY	FLINT	3901	FLINT	48507
4500 N DORT HWY	FLINT	914	FLINT	48503
4500 N DORT HWY	FLINT	605	FLINT	48503
4500 N DORT HWY	FLINT	125 E	FLINT	48502
4500 N DORT HWY	FLINT	2717	FLINT	48504
4500 N DORT HWY	FLINT	932	FLINT	48503
4500 N DORT HWY	FLINT	1006	FLINT	48503
4500 N DORT HWY	FLINT	3106	FLINT	48504
4500 N DORT HWY	FLINT	629	FLINT	48507
4500 N DORT HWY	FLINT	1001	FLINT	48503
4500 N DORT HWY	FLINT	UNKNOWN	FLINT	
4500 N DORT HWY	FLINT	1025 E	FLINT	48503
4500 N DORT HWY	FLINT	1602	FLINT	48503
4500 N DORT HWY	FLINT	535 LETA	FLINT	48507
4500 N DORT HWY	FLINT	2115	FLINT	48503
4500 N DORT HWY	FLINT	2413	FLINT	48504
4500 N DORT HWY	FLINT	225 W	FLINT	48503

4500 N DORT HWY	FLINT	829	FLINT	48503
4500 N DORT HWY	FLINT	1006 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	2553	FLINT	48503
4500 N DORT HWY	FLINT	2616	FLINT	48507
4500 N DORT HWY	FLINT	1308	FLINT	48503
4500 N DORT HWY	FLINT	904 E 7TH	FLINT	48503
4500 N DORT HWY	FLINT	1210	FLINT	48503
4500 N DORT HWY	FLINT	1112 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	501 W	FLINT	
4500 N DORT HWY	FLINT	2309	FLINT	48507
4500 N DORT HWY	FLINT	311 S	FLINT	48503
4500 N DORT HWY	FLINT	3123	FLINT	48507
4500 N DORT HWY	FLINT	924	FLINT	48507
4500 N DORT HWY	FLINT	913	FLINT	48503
4500 N DORT HWY	FLINT	1728	FLINT	48503
4500 N DORT HWY	FLINT	514	FLINT	48504
4500 N DORT HWY	FLINT	1110	FLINT	48507
4500 N DORT HWY	FLINT	1118	FLINT	48507
4500 N DORT HWY	FLINT	555	FLINT	48503
4500 N DORT HWY	FLINT	5602	FLINT	48505
4500 N DORT HWY	FLINT	1213 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	218	FLINT	48503
4500 N DORT HWY	FLINT	1126	FLINT	48503
4500 N DORT HWY	FLINT	2721	FLINT	48503
4500 N DORT HWY	FLINT	719	FLINT	48503
4500 N DORT HWY	FLINT	725	FLINT	48503
4500 N DORT HWY	FLINT	2925	FLINT	48503
4500 N DORT HWY	FLINT	1820	FLINT	48506
4500 N DORT HWY	FLINT	2018	FLINT	48504
4500 N DORT HWY	FLINT	3702	FLINT	48506
4500 N DORT HWY	FLINT	3622	FLINT	48503
4500 N DORT HWY	FLINT	2101	FLINT	48504
4500 N DORT HWY	FLINT	1310	FLINT	48503
4500 N DORT HWY	FLINT	1422	FLINT	48503
4500 N DORT HWY	FLINT	2430	FLINT	48504
4500 N DORT HWY	FLINT	602 W	FLINT	48505
4500 N DORT HWY	FLINT	1319 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	1013 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	2715	FLINT	48507
4500 N DORT HWY	FLINT	7002	FLINT	48505
4500 N DORT HWY	FLINT	705 SIMCOE	FLINT	48507
4500 N DORT HWY	FLINT	3330	FLINT	48503
4500 N DORT HWY	FLINT	841	FLINT	48504
4500 N DORT HWY	FLINT	839 W	FLINT	48505
4500 N DORT HWY	FLINT	333 BEDE ST	FLINT	48507
4500 N DORT HWY	FLINT	3013	FLINT	48503
4500 N DORT HWY	FLINT	613	FLINT	48503
4500 N DORT HWY	FLINT	2630	FLINT	48503
4500 N DORT HWY	FLINT	2529 N	FLINT	48504
4500 N DORT HWY	FLINT	927	FLINT	48503
4500 N DORT HWY	FLINT	1205	FLINT	48503
4500 N DORT HWY	FLINT	3917 RED	FLINT	48507
4500 N DORT HWY	FLINT		FLINT	
4500 N DORT HWY	FLINT	1426	FLINT	48506
4500 N DORT HWY	FLINT	1329	FLINT	48503

4500 N DORT HWY	FLINT	1112 BEARD	FLINT	48503
4500 N DORT HWY	FLINT	329 W	FLINT	48505
4500 N DORT HWY	FLINT	1201	FLINT	48507
4500 N DORT HWY	FLINT	3120	FLINT	48503
4500 N DORT HWY	FLINT	721 FRANK	FLINT	48504
4500 N DORT HWY	FLINT	1502 S	FLINT	48503
4500 N DORT HWY	FLINT	UNKNOWN	FLINT	
4500 N DORT HWY	FLINT	440 E	FLINT	48507
4500 N DORT HWY	FLINT	329 W	FLINT	48505
4500 N DORT HWY	FLINT	1302	FLINT	48507
4500 N DORT HWY	FLINT	1407	FLINT	48504
4500 N DORT HWY	FLINT	205 W	FLINT	48503
4500 N DORT HWY	FLINT	3200	FLINT	48506
4500 N DORT HWY	FLINT	2001 N	FLINT	48506
4500 N DORT HWY	FLINT	2708	FLINT	48503
4500 N DORT HWY	FLINT	ST JOHN	FLINT	
4500 N DORT HWY	FLINT	3613 LEITH	FLINT	48506
4500 N DORT HWY	FLINT	1614	FLINT	48503
4500 N DORT HWY	FLINT	3405	FLINT	
4500 N DORT HWY	FLINT	4301	FLINT	48507
4500 N DORT HWY	FLINT	3822	FLINT	48532
4500 N DORT HWY	FLINT	5838	FLINT	48505
4500 N DORT HWY	FLINT	1623	FLINT	48503
4500 N DORT HWY	FLINT	1210	FLINT	48503
4500 N DORT HWY	FLINT	225 W	FLINT	48503
4500 N DORT HWY	FLINT	2319	FLINT	48504
4500 N DORT HWY	FLINT	318	FLINT	48507
4500 N DORT HWY	FLINT	224	FLINT	48503
4500 N DORT HWY	FLINT	1220 E	FLINT	
4500 N DORT HWY	FLINT	2540 S	FLINT	48503
4500 N DORT HWY	FLINT	829 E	FLINT	48503
4500 N DORT HWY	FLINT	2801 YALE	FLINT	48503

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, October 20, 2015 2:45 PM
To: Gardner, Michael (OAG)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Shekter, Jean (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ); Sygo, Jim (DEQ)
Subject: OAG Requested Items
Attachments: CWS Monitoring Charts - January 2014.pdf; Flint.pdf; Flint-GMsites.jpg

Mike,

Here are the following items you requested during our meeting on 10/15.

Reference to the Recommended standards for water works (Ten State Standards) is as follows under Rule 113 and Rule 1302:

R 325.10113 Compliance with rules; guidance information.

Rule 113. Public water supplies may use the information in the following publications as guidance to comply with these rules:

(a) Recommended standards for water works, prepared by the Great Lakes--upper Mississippi river board of state sanitary engineers, is available for inspection at the department offices in Lansing, and may be purchased at a cost of \$12.00 from the Health Education Services, P.O. Box 7126, Albany, New York 12224 telephone 518-439-7286, Internet <http://www.hes.org/>.

(b) The American water works association manual M 19, emergency planning for water utilities, 2001, as referred to in part 23, is available for inspection at the department offices in Lansing, and may be purchased at a cost of \$95.00 from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235, telephone 1-800-926-7337, Internet www.awwa.org.

(c) Suggested practices for waterworks design, construction, and operation for type I public water supplies, February 2008, prepared by the Michigan department of environmental quality, water bureau, is available for inspection at the department offices in Lansing and on the Internet at <http://www.michigan.gov/deq>.

(d) Cross connection rules manual, fourth edition, October 2008, prepared by the Michigan department of environmental quality, water bureau, is available for inspection at the department offices in Lansing and on the Internet at <http://www.michigan.gov/deq>.

History: 1979 AC; 2000 AACs; 2009 MR 23, Eff. Dec. 4, 2009.

R 325.11302 Submission of plans and specifications for construction or alteration of waterworks system; guidance material.

Rule 1302. (1) For type I public water supplies, before the construction or alteration of a waterworks system, or a portion of a waterworks system, plans and specifications shall be submitted to the department by a public water supply or its designated agent for review, approval, and issuance of a permit, unless otherwise accepted under R 325.11304.

(2) A permit application shall be submitted with the plans and specifications, shall identify and summarize plans or projects, and, if applicable, shall indicate the authorization of the designated agent for the public water supply.

(3) Both of the following shall be used, whenever applicable, when preparing plans and specifications:

(a) Recommended standards for water works, prepared by the Great Lakes Upper Mississippi board of state sanitary engineers under R 325.10113.

(b) Suggested practices for waterworks design, construction, and operation for type I public water supplies, prepared by the Michigan department of environmental quality, water bureau under R 325.10113.

History: 1979 AC; 2009 MR 23, Eff. Dec. 4, 2009.

Here's a link to the current version of the Recommended Standards for water works.

<http://www.10statesstandards.com/waterrev2012.pdf>

Summary of monitoring requirements chart

The attached, CWS Monitoring Charts – January 2014.pdf, should give you a more readable listing of the monitoring requirements instead of having to look at each rule. Jean Shekter and Kris Philip can help decipher this chart if you have questions or need the rule references.

Map of Flint Water System

A copy of the water system map is attached (Flint.pdf). Please note that this map is a controlled document that should not be shared with others for security purposes related to critical infrastructure.

Flint WTP in relation to GM Sites

A google earth map image attached, Flint-GMsites.jpg, shows the location of the Flint WTP in relation to the GM assembly plant and the Buick City site. Not sure if these were the GM site(s) you were wondering about.

Flint Population and Service Connection History

Before 2006, population = 140,761

2006, population = 124,943 (2000 census); 41,537 residential & small commercial accounts

2009, population = 118,645 (DWRP project plan); 38,000 residential accounts

1/2013, population = 102,434 (2010 census); 31,228 residential accounts

3/2015, population = 99,763 (2013 census estimate); 24,600 residential accounts

(FYI the 2014 census estimate is listed as 99,002)

Let me know when you want to meet again and if there is any other info you need.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

Entry Point Monitoring			
		GW Sources	SW Sources (including GWUDI)
Partial Chemistry ¹	Initial	1 / year	Quarterly for 1 year
	Routine		1 / year
Metals ²	Initial	1 / 3 years (3 sets)	1 / year (3 sets)
	Routine	1 / 9 years	1 / 9 years
Volatile Organic Compounds ⁵	Initial	Quarterly for 1 year ⁶	Quarterly for 1 year ⁶
	Routine	1 / 3 years	1 / year
Synthetic Organic Compounds (CXPT, CXHB, CXLP)	Initial	Quarterly for 1 year ⁶	Quarterly for 1 year ⁶
	Routine	With WHPP ⁷ / Tritium ⁸ : Waived Without WHPP / Tritium: 1 / 3 years	Least Vulnerable ⁹ : 1 / 3 years Moderately Vulnerable ⁹ : 2 / 3 years ¹⁰ Highly Vulnerable ⁹ : Quarterly ¹¹
Expanded SOC (EDB, DBCP, Endothal, Diquat, Glyphosate If unchlorinated, Dalapon)	Initial	Vulnerable aquifers (karst, gravel/cobble): 1 / 3 years All others: Waived	Least Vulnerable and a majority of Moderately Vulnerable ⁹ : Waived Select Moderately Vulnerable ¹² : 1 / 3 years ¹³ Highly Vulnerable ⁹ : 1 / year ¹³
	Routine		
Cyanide	Initial	1 / 3 years (3 sets)	1 / year (3 sets)
	Routine	1 / 9 years	1 / 9 years
Radionuclides ¹⁴	Initial	Quarterly for 1 year ¹⁵	Quarterly for 1 year ¹⁵
	Routine	< Detection Limit: 1 / 9 years ≥ Detection Limit but ≤ 1/2 MCL: 1 / 6 years > 1/2 MCL but ≤ MCL: 1 / 3 years > MCL: Quarterly	< Detection Limit: 1 / 9 years ≥ Detection Limit but ≤ 1/2 MCL: 1 / 6 years > 1/2 MCL but ≤ MCL: 1 / 3 years > MCL: Quarterly
Water Quality Parameters ¹⁶	Initial	WQPs of Rule 710b(4)(b): 2 / 6 months	WQPs of Rule 710b(4)(b): 2 / 6 months
	OCCT	WQPs of Rule 710b(5)(b): 1 / 2 weeks	WQPs of Rule 710b(5)(b): 1 / 2 weeks
Bromate	Initial	1 / month / plant that uses ozone	1 / month / plant that uses ozone
	Reduced	1 / quarter / plant if RAA ≤ 0.0025 mg/L	1 / quarter / plant if RAA ≤ 0.0025 mg/L
Chlorite		1 / day / plant if disinfecting with ClO ₂	1 / day / plant if disinfecting with ClO ₂
Chlorine Dioxide		1 / day / plant if disinfecting with ClO ₂	1 / day / plant if disinfecting with ClO ₂
TOC & Alkalinity	Initial	NA	1 set source alkalinity, source TOC, & treated TOC / month / conventional filtration plant
	Reduced	NA	1 set / quarter if average treated TOC < 2.0 mg/L for 2 cons years, or <1.0 mg/L for 1 year

Footnotes:

¹ Partial Chemistry scan (at MDEQ laboratory only) includes contaminants with varying monitoring frequencies as follows:

		GW Sources	SW Sources (including GWUDI)
Nitrate	Initial	1 / year	Quarterly for 1 year
	Routine	1 / year if <50% MCL Quarterly if any sample ≥50% MCL ³	1 / year if all quarters <50% MCL Quarterly if any sample ≥50% MCL ⁴
Nitrite	Initial	1 / 3 years	1 / 3 years
	Routine	1 / 3 years if <50% MCL Qtrly for 1 yr if any 1 sample ≥50% MCL ³	1 / 3 years if <50% MCL Qtrly for 1 yr if any 1 sample ≥50% MCL ³
Fluoride		1 / 3 years	1 / year
Sodium		1 / 3 years	1 / year

² For detailed arsenic monitoring information, see Water Division policy WD-03-020 dated October 20, 2003.

³ If all samples from 4 consecutive quarters <MCL, return to 1/year and monitor during quarter that had highest result.

⁴ If all samples from 4 consecutive quarters <50% of the MCL, return to 1/year and monitor during quarter that had highest result.

⁵ If VOCs are confirmed detected, monitor quarterly for VOCs and monitor once for EDB and DBCP.

⁶ If no detects in first quarter, waive remaining quarterly monitoring and go directly to routine monitoring.

⁷ A Contaminant Source Inventory must be completed, with no indication of vulnerability, to be eligible for this waiver.

⁸ Tritium in lieu of WHPP: Waiver requires initial/confirmation tritium samples <1.0 and sampling 1 / 3 years thereafter.

⁹ Least Vulnerable: SW systems and GWUDI systems that are not moderately or highly vulnerable.

Moderately Vulnerable: Bay City, Lake St Clair, St Clair & Detroit Rivers, Monroe, Frenchtown, St Joseph, Benton Harbor, Alpena.

Highly Vulnerable: All inland river supplies.

¹⁰ Collect one sample in the 2nd quarter AND one sample in the 3rd quarter of every 3rd calendar year.

¹¹ With sufficient historical data, may reduce frequency of non-detect contaminants to 1 / year, to be taken during 2nd OR 3rd quarter.

¹² Select moderately vulnerable systems include: Alpena, Bay City, Monroe, Mt Clemens, St Joseph, Wyandotte

¹³ Collect sample during the 2nd OR 3rd quarter of year due.

¹⁴ Gross Alpha may be substituted for radium 226 and/or uranium if results ≤ 5 pCi/L or ≤ 15 pCi/L, respectively.

¹⁵ If first 2 quarters are below the detection limit, waive remaining quarterly monitoring and go directly to routine monitoring.

¹⁶ Required for systems > 50,000. Required for systems ≤ 50,000 during any monitoring period the Pb and/or Cu AL is exceeded.

Distribution Monitoring			
		GW Sources	SW Sources (including GWUDI)
Bacteriological		Required # / month	Required # / month
Lead / Copper	Initial	Required # of sites / 6 months for 1 year	Required # of sites / 6 months for 1 year
	Routine	Required reduced # of sites / 1, 3, or 9 years ¹	Required reduced # of sites / 1, 3, or 9 years ¹
Water Quality Parameters ²	Initial	WQP of Rule 710b(4)(a): 2 / # of sites / 6 mnths	WQP of Rule 710b(4)(a): 2 / # of sites / 6 mnths
	Reduced	WQPs of Rule 710b(5)(a): 2 / reduced # of sites / 6 months, 1 year, or 3 years	WQPs of Rule 710b(5)(a): 2 / reduced # of sites / 6 months, 1 year, or 3 years
Chlorine or Chloramines Residual		Same time & place as bacteriological sampling	Same time & place as bacteriological sampling ³
TTHM & HAA5 (if adding chemical disinfectant)	Routine	Required # of sites / quarter or 1 year	Required # of sites / quarter or 1 year
	Reduced ⁷	Required reduced # of sites / quarter, 1 year, or 3 years	Required reduced # of sites / quarter or 1 year
Chlorite (if adding ClO ₂)	Routine	1 set of 3 samples ⁸ / month / plant and 1 set of 3 samples ⁸ on day following a daily sample > MCL at EPTDS	1 set of 3 samples ⁸ / month / plant and 1 set of 3 samples ⁸ on day following a daily sample > MCL at EPTDS
	Reduced ⁹	1 set of 3 samples ⁸ / quarter / plant	1 set of 3 samples ⁸ / quarter / plant
Chlorine Dioxide (if adding ClO ₂)		If chlorine dioxide at the entry point >MRDL, then monitor according to footnote 10.	If chlorine dioxide at the entry point >MRDL, then monitor according to footnote 10.

Footnotes:

¹ Samples must be collected during June, July, August or September.

² Required for all systems > 50,000. Required for all systems ≤ 50,000 during any monitoring period the lead and/or copper action level is exceeded.

³ System with a heterotrophic plate count ≤ 500 /mL is considered to have a detectable disinfectant residual.

⁴ Collect annual samples during month of warmest water temperature.

⁵ Collect samples at a locations representing maximum residence time.

⁶ Collect 25% of samples at locations representing maximum residence time and 75% at locations representing at least average residence time.

⁷ May not reduce TTHM & HAA5 if source water TOC > 4.0 mg/l.

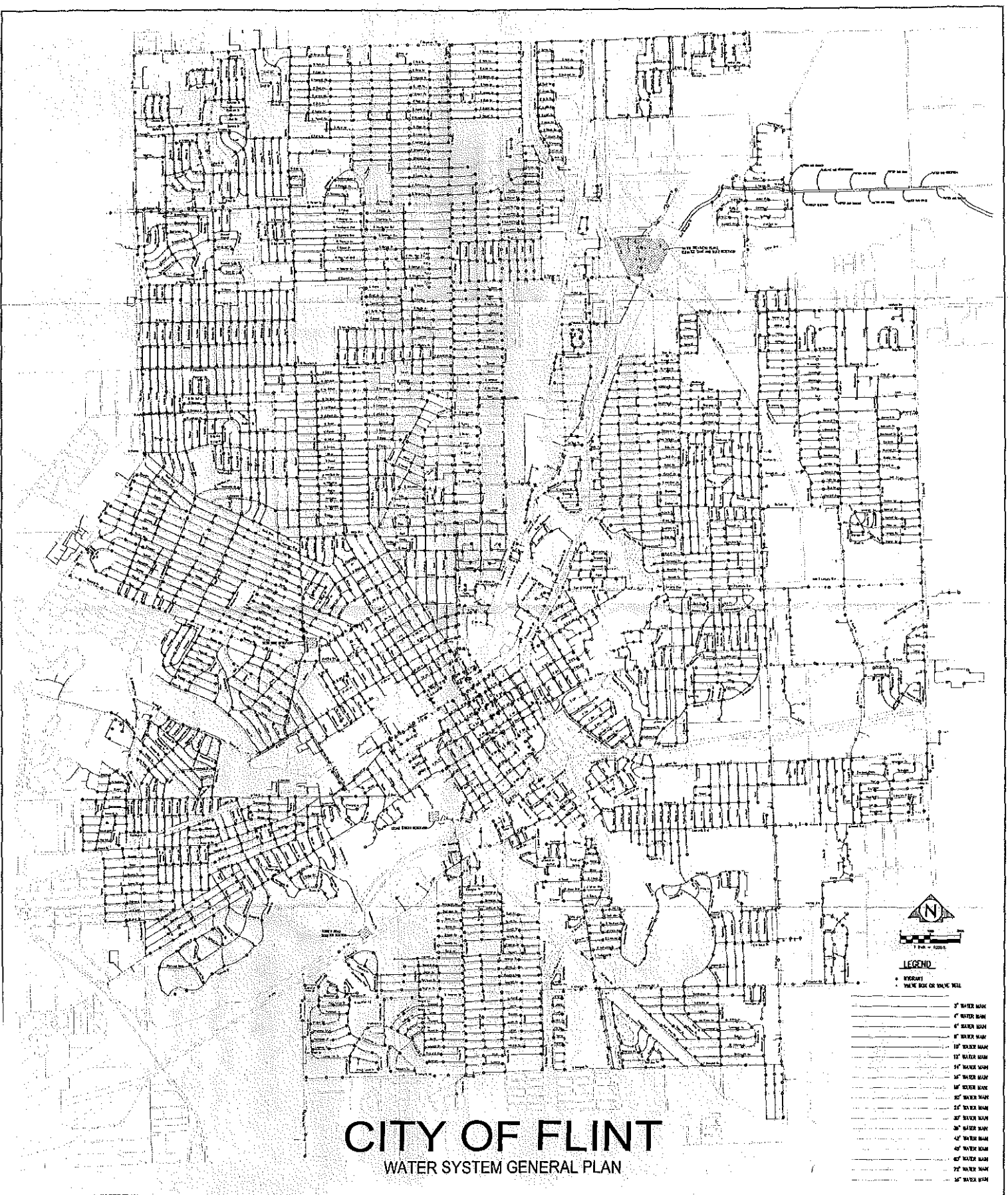
⁸ Collect 1 sample near first customer, 1 at location representing average residence time, and 1 at location representing maximum residence time.

⁹ Applies if all samples of the 3-sample set <1.0 mg/l (MCL) for 1 year and supply is not required to monitor due to an exceedance at the EPTDS. Resume routine if 1 or more chlorite samples from 3-sample set >MCL or EPTDS sample >MCL.

¹⁰ If chlorine dioxide at the entry point >MRDL, then monitor according to the following table:

If maintaining a residual in the distribution system using ...	Then sample for chlorine dioxide at the following distribution locations:
chlorine dioxide or chloramines ...	
chlorine, and one or more disinfection addition points after the EPTDS are not present ...	3 as close to the first customer as possible at intervals of at least 6 hours.
chlorine, and one or more disinfection addition points after the EPTDS are present...	1 sample near the first customer, 1 each at locations representing average and maximum resident time.

Note: Some contaminants (asbestos, dioxin, etc.) are waived in part or in full per 1992/93 monitoring waiver program.





Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, October 16, 2015 1:17 PM
To: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: FW: Flint Safe Drinking Water Act Issue
Attachments: Memo - Litigation Hold 2015-10-15.pdf

As discussed please follow the AG instructions.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Shekter Smith, Liane (DEQ)
Sent: Friday, October 16, 2015 11:50 AM
To: Benzie, Richard (DEQ); Philip, Kris (DEQ); Cook, Pat (DEQ); Devereaux, Tracy Jo (DEQ); Graham, Lois (DEQ)
Cc: DeBruyn, Dana (DEQ); Monosmith, Carrie (DEQ); Butler, Sonya (DEQ); Busch, Stephen (DEQ); Rennaker, Joanne (DEQ)
Subject: FW: Flint Safe Drinking Water Act Issue

Important. Please note.

Liane J. Shekter Smith, P.E., Chief
 Office of Drinking Water and Municipal Assistance
 Michigan Department of Environmental Quality
 517-284-6543

From: Kuhl, Richard (AG)
Sent: Thursday, October 15, 2015 4:03 PM
To: Sygo, Jim (DEQ); Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Cc: Bettenhausen, Margaret (AG); Synk, Polly (AG)
Subject: Flint Safe Drinking Water Act Issue

All,

Because of the *potential* for litigation being filed against the Department over the Safe Drinking Water Act issues involving the City of Flint's use of water from the Flint River, we believe that a litigation hold should be put in place to ensure that documents and information relating to this matter are preserved. As stated in the memo, we recommend that the memo be circulated to any DEQ employees or contractors who have been involved in these issues. DTMB should also be alerted to ensure that electronic information is maintained.

Please let us know if you have any questions regarding the attachment or if we provide you any assistance on this issue.

Richard

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DEPARTMENT OF
ATTORNEY GENERAL
M E M O R A N D U M

October 15, 2015

TO: Jim Sygo, Chief Deputy Director, Department of Environmental Quality (MDEQ)
George Krisztian, Flint Action Plan Coordinator and Laboratory Director
Liane Shekter Smith, Chief, Office of Drinking Water and Municipal Assistance (ODWMA)
Steve Busch, District Supervisor, Lansing District Office, ODWMA

FROM: Richard S. Kuhl 
Margaret A. Bettenhausen
Assistant Attorneys General
ENRA Division

RE: LITIGATION HOLD FOR THE PRESERVATION OF EVIDENCE
NOTICE
City of Flint – Safe Drinking Water Act

A party to litigation or person that reasonably anticipates involvement in litigation has an affirmative obligation to retain and preserve information relevant to the claims that are or may be litigated. This information includes electronic documents and other data. Recent amendments to the federal and state court rules have expanded the types of information subject to discovery to include electronic data in all its forms. The increasing amount of electronic data, referred to in the court rules as "electronically stored information" (ESI) and the ease with which it can be transferred between different media, creates a particular concern for handling ESI in the litigation context. Accordingly, the Attorney General has developed this memorandum to provide specific notice to our client agencies when the obligation to preserve ESI arises.

The Attorney General has determined that due to likely litigation involving the MDEQ, that the Department has an obligation to preserve ESI for litigation purposes. You should take immediate action to preserve all electronically stored documents and electronic data relating to the City of Flint's use of the Flint River for drinking water beginning in 2014. This obligation is in addition to the duty to preserve all other related materials. Failure to comply with this Litigation Hold may expose the Department to adverse rulings by the court including court-imposed sanctions.

Litigation Hold Memo
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October 15, 2015

"Electronically Stored Documents and Electronic Data" as used in this LITIGATION HOLD FOR THE PRESERVATION OF EVIDENCE NOTICE includes all associated metadata, audio recordings, videotape, e-mail, word processing documents, spreadsheets, databases, calendars, telephone logs, and all other electronic information maintained, created or received by the MDEQ and its employees related to the described matter.

"Sources" include all computer hard drives, removable media (for example, CDs and DVDs), laptop computers, PDAs, tablets, Blackberry devices, and any other locations where electronic data is stored. Keep in mind that any of the above-mentioned sources of information may include personal computers and all other personal electronic equipment or devices used for business related matters.

Please distribute this memo to other DEQ employees and contractors who may have documents, data, or ESI related to the City of Flint use of the Flint River for drinking water.

In order to comply with these requirements, the MDEQ must immediately preserve all existing ESI related to the possible litigation described above. Guidance on how to preserve this ESI is available from the Department of Information Technology (DTMB). If you need technical assistance, you should schedule a meeting with DTMB. We can participate in that meeting if necessary. If you have questions about this Notice, please contact Richard Kuhl at (517) 335-0696 or kuhlr@michigan.gov or Margaret Bettenhausen at (517) 335-1471 or bettenhausenm@michigan.gov.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, October 15, 2015 10:31 AM
To: Howard Croft (hcroft@cityofflint.com); Michael Glasgow; 'bwright@cityofflint.com'; Tim Davidek (T_DAVIDEK@gcdcwws.com); jfobrien@gcdcwws.com; "mhorgan@gcdcwws.com".GWIA.SOM-GWIA01; Krisztian, George (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Benzie, Richard (DEQ); Rosenthal, Adam (DEQ)
Subject: Recommissioning the 72-inch transmission main

Based upon discussions with Genesee County and the city of Flint, the portion of the 72-inch transmission main (pipeline) that was taken out of service, while the Flint Water Treatment Plant (WTP) treated water from the Flint River, was flushed and disinfected in accordance to AWWA Standard C651-14. Two sets of samples were collected from two locations 16 hours apart for total coliform analysis. The city of Flint and Genesee County has informed the DEQ that both sets of samples are Non-Detect for total coliform. Based upon the disinfection procedure and the absence of total coliform from both sets of samples, the un-used portion of the pipeline may be placed into service.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, July 28, 2015 9:47 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Monosmith, Carrie (DEQ); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ); Holdwick, Kevin (DEQ)
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Final Notes from Michigan semi-annual call on 6/10

I was supposed to finalize these in mid-July, but I didn't receive any changes from anyone, so these notes are final now. Thank you all again for participating.
 Jennifer

From: Crooks, Jennifer
Sent: Wednesday, July 01, 2015 5:31 PM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; Holdwick, Kevin (DEQ)
Cc: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review—I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:

MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
 EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Nouredin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP—for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:

(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits

to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June – September 2016 timeframe

(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe

(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all NTNCWSs. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality. The State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

d. Submittal of the lead and copper reporting form

(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field. Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. Dan stated that sample sites for NTNCWSs are actually identified by LHDs during the sanitary survey and are documented in the sanitary survey. The LHDs check the pdf of the laboratory results that clearly states where the sample was taken, and calculates the 90th percentile. However, Dan stated that the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

From our discussion, the Region concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentiles to ensure proper LCR monitoring is conducted by ALL NTNCWSs at the proper sample sites. After our call, I asked for verification of this statement, and Dan Dettweiler

responded, "Just as with an exceeding value of an MCL, WaterTrack alerts the LHD when at least one sample for a water system exceeds the AL. A 90th percentile calculation is made only when an exceeding result alerts the LHD. For cases where there are no exceeding results, private lab samples are reviewed at the time LHDs hand-enter them into WaterTrack. State lab samples, which flow electronically via nightly downloads from the state lab database, are reviewed when pdfs of the analysis reports are, routinely, emailed by the state lab to LHDs. Beyond that, MDEQ's annual evaluation of the LHDs provides another opportunity for us to oversee the proper assigning and use of designated sampling locations."

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather

NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:

Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (± 27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.

Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent (OR drafted?) to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

<https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/>

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Ms. Leeanne Walters in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.

Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, \$2M which includes \$900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is

number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the queue, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"

Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April

From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement—that of decreasing numbers of bacte/nitrate M/R violations.

However, in light of the upcoming implementation of RTRC in 2016, the question raised here in the Region is:

Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitararians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, September 10, 2015 5:58 PM
To: Shekter Smith, Liane (DEQ)
Cc: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Poy, Thomas; Porter, Andrea; Devereaux, Tracy Jo (DEQ); Kuefler, Janet; Shoven, Heather; Deltoral, Miguel
Subject: Final Notes from call Tuesday 8/31/15 with MI DEQ RE: Flint

Thank you, Liane, for your edits—I incorporated all of your edits, and further clarified who said what.
 Jennifer

Date: August 31, 2015
Present: Liane Shekter Smith, Richard Benzie, Steve Busch, (2 other MDEQ staff?), Tom Poy, Andrea Porter, Janet Kuefler, Jennifer Crooks

STRATEGIC NEXT STEPS FOR FLINT TO ADDRESS LEAD CORROSION CONCERNS

Tom Poy discussed Marc Edwards' website, "Flint, MI Water Study Updates" (<https://flintwaterstudyupdates.wordpress.com/>). The discussion focused on the lead sampling and analytical results Marc Edwards' team posted to their website. Tom emphasized that EPA is not involved with Marc Edwards' work in Flint. Tom mentioned that the Edwards team's samples may not have been analyzed by a certified lab (which is only required for compliance samples) nor taken from sites that qualify as Tier 1 for LCR compliance sampling, but the results give further evidence that lead levels in Flint are trending upward. (The conclusion that there is an increasing trend of lead concentrations at consumer taps builds upon earlier compliance sampling taken by Flint in 2014 and 2015 that showed the 90th percentile of the 1st 6-month sampling period at 6ppb, then the 90th percentile of the 2nd 6-month sampling period at 11ppb.) Everyone at the meeting agreed that Flint is in compliance with the Safe Drinking water Act action level for lead. However, because the city's population exceeds 50,000 persons, MDEQ stated that Flint needs to additionally optimize their treatment process to reduce lead levels further, if possible.

The "Flint, MI Water Study Updates" website is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of optimized corrosion control treatment in an expedited manner in order to protect the residents from exposure to high lead levels. Richard noted that there are numerous systems across the country that have installed corrosion control treatment, have optimized their corrosion control, but did not necessarily reduce their lead levels. We all acknowledged that this is true. MDEQ acknowledged that implementing installation of corrosion control treatment in Flint is prudent to protect public health since there are approximately 15,000 lead service lines within the city. EPA acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint's many lead service lines are continuously in contact with corrosive water.

Region 5 and MDEQ brainstormed on strategic next steps for Flint to address lead corrosion concerns. These steps included:

1. **Public Education for Flint Residents.** Liane has contacted the Department of Community Health to discuss developing a consumer lead education piece outlining the consumer's options to lower the lead in their drinking water. The Region was glad to hear of a plan to initiate Lead Public Education since this will provide the public immediate actions they can take. The educational material could include steps consumers can take to reduce their exposure to lead in drinking water (flushing their lines after long stagnation periods, using filters certified to remove lead, etc.) as well as longer term fixes to remove lead sources (for example, financing the cost to

remove any part of a lead service line on the owner's property at the same time as Flint is replacing its portion of the lead service line).

2. **Gathering Information on Flint's Future Treatment Plans.** Steve Busch said Flint and their engineering consultants were meeting this week (Sept 1) to discuss conceptually the necessary optimized corrosion control treatment at Flint. Tom Poy shared EPA lead experts' (Mike Schock and Darren Lytle of EPA's Office of Research and Development in Cincinnati) caution against simply adding orthophosphate without first studying the water quality and existing distribution system conditions to ensure that any installed treatment has a good chance of working. EPA lead experts have research and field experience showing the complexity of optimizing corrosion control treatment when water quality is significantly changed, as is the case for Flint.
3. **Offering Flint Free Help from EPA Experts.** Steve Busch has already provided the names of EPA lead experts (Mike Schock and Darren Lytle) to Flint, as has Susan Hedman, R5 Administrator. MDEQ and Region 5 agree that, to successfully control lead corrosion in the distribution system, Flint needs to review this situation holistically, while also addressing the lead issue in an expedited manner.
4. **Laying Groundwork for MDEQ/EPA Collaboration with Flint.** If Flint accepts the offer of technical assistance for optimizing corrosion control, Tom Poy suggested that MDEQ and EPA lead experts (Mike Schock and Darren Lytle) form a partnership to provide such help. EPA experts are able to provide pipe scale analyses, as well as other laboratory support. Although Flint (using their consultant) bears the ultimate responsibility for designing and installing corrosion control, MDEQ and EPA experts are willing and able to provide advice throughout the process.

END

Jennifer

Jennifer Kurtz Crooks
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Rennaker, Joanne (DEQ)

From: Shekter Smith, Liane (DEQ)
Sent: Monday, August 03, 2015 3:34 PM
To: Cook, Pat (DEQ); Busch, Stephen (DEQ)
Subject: FW: FOR REVIEW: MDEQ - Flint Call Notes
Attachments: MDEQ Call on July 21_call notes v4.docx

Just received the attached. Haven't reviewed it yet.

From: Hyde, Tinka [<mailto:hyde.tinka@epa.gov>]
Sent: Monday, August 03, 2015 3:31 PM
To: Shekter Smith, Liane (DEQ)
Cc: Poy, Thomas; Bair, Rita
Subject: FOR REVIEW: MDEQ - Flint Call Notes

Hi Liane – Attached are our notes from our call on 7/21 regarding Flint Drinking Water System. Please take a look and let me know if you have any questions or comments. Thanks

Notes on Call with MDEQ on July 21, 2015

MDEQ Implementation of LCR Rule and Flint Issues

Issue #1: Is there a public health concern regarding lead in Flint or other regulatory requirements?

- The 90th percentile results of the 2nd round of monitoring was 11 ppb.
- The population has dropped to under 100,000 and therefore the 1st round of 6-month monitoring was done for 100 samples, but the 2nd round only needed 60 samples.
- Customer-requested samples were included, but MDEQ did not have specifics on how many there were.
- Tinka asked about the timeline for Flint to switch over to the Lake Huron water source. MDEQ said the pipeline is under construction and scheduled to be complete by July 2016. MDEQ expects some delays and thinks a more realistic timeframe is October 2016.
- MDEQ explained that Flint would have 18 months to complete the corrosion control study and the complicating factor of switching over to Lake Huron. Should the corrosion control study be based on the Lake Huron source? MDEQ also explained that once Flint is using Lake Huron water that they would then need to complete 2 more rounds of 6-month monitoring to assess whether any adjustments to the corrosion control treatment was needed.
- MDEQ will be sending a letter to Flint telling them they need to complete a corrosion control study – based on results they are not optimized. Given the timing of completing a corrosion control study and the anticipated switch to Lake Huron water, MDEQ will have discussions with Flint and request that they start corrosion control treatment as soon as possible.
- MDEQ asked for Region 5's opinion on whether the regulations allow for the study requirement for Flint to be waived if MDEQ has Flint start pH adjustments and adding phosphates. Region 5 will look into this and get back to MDEQ with an answer. All acknowledged that if Flint initiated corrosion control treatment and continued to evaluate the system to ensure optimization that these efforts would essentially equate to a corrosion control study.
- The Region raised its concern about looking at treatment more comprehensively to ensure problems with DBPs didn't occur. MDEQ stated that Flint is on the brink of DBP compliance and that bacteriological issues haven't occurred since last year. Any adjustments for corrosion control treatment would need to make sure the other issues weren't exacerbated.
- Region 5 again offered the assistance of ORD staff, Darren Lytle and Mike Schock which MDEQ said they had shared with Flint already.

Issue #2: Discuss optimal corrosion control requirements

Discussion Items:

- MDEQ explained that they did not treat the switch to Flint River water as a "new system", but as a new source. It is their understanding that 2 rounds of 6-month monitoring is still needed to characterize the water quality. They don't know what is optimized until those 2 rounds of 6-month monitoring are completed.

- Region 5 noted that under 141.81(b)(3)(iii) that any system that has been deemed optimized must notify the State of any long-term change in treatment or the addition of a new source. The State must review and approve the change and may require any such system to conduct additional monitoring or other action to ensure that the system maintains minimal levels of corrosion in the distribution system. The State's requirement for 2 additional rounds of 6-month monitoring would fall under the "additional monitoring" prescribed by the State and not the initial 2 rounds of 6-month monitoring for new systems.
- Region 5 explained that they have talked to HQ about the interpretation of regulations and believes that systems that have been deemed optimized need to "maintain" corrosion control. The Region agreed to provide supporting regulatory citations for the language about maintaining corrosion control. Ed Moriarty in OGWDW is also consulting OGC on this topic and the OGC opinion will also be shared.
- MDEQ mentioned that there are other communities that may leave the Detroit system or connect to the new Lake Huron pipeline, but many of those either don't need to treat for corrosion control or will be building new treatment plants. Requirements for maintaining corrosion control for additional communities connecting to the Lake Huron pipeline will be discussed further after receipt of the HQ/OGC opinion.

Issue #3: Discuss Pre-flushing (as time allows)

- Lead compliance sampling procedures in the state of Michigan comply with Federal SDWA requirements which calls for a minimum of 6 hours during which there is no water used from the tap the sample is taken from.
- MDEQ is not interested in changing its position on pre-flushing until new regulations come out. They also pointed out that the pre-flushing instructions are not requirements, but suggestions.
- The Michigan pre-flushing instructions were developed as a way to ensure that sampled faucets were not stagnant for an excessive period of time beyond the targeted 6 hour (i.e., rarely used faucets or when a homeowner has been gone for an extended period of time).

Next Steps:

- MDEQ will send a letter to Flint regarding the 2 rounds of 6-month monitoring results that exceed 5 ppb and the need for a corrosion control study. They will have discussions with Flint to request that they start corrosion control treatment as soon as possible rather than waiting for the completion of a study that can take 18 months.
- MDEQ and the Region were in agreement that it is important to get phosphate addition going in Flint as soon as possible. MDEQ mentioned tapping Mike Shock for help with this in the interim.
- Region 5 commented that we now have a path forward for Flint despite a difference of opinion on whether the regulations required Flint to "maintain" corrosion control treatment when they started serving treated water from the Flint River.
- MDEQ and Region 5 agreed that after Flint implements corrosion control treatment, when they switch back to Lake Huron water, they will need to continue the corrosion control treatment while conducting monitoring to determine if this treatment is optimized with the new Lake Huron water quality.

- Region 5 will get back to MDEQ once it gets HQ/OGC's opinion on the need to "maintain" corrosion control treatment once a system is deemed optimized.
- MDEQ and Region 5 agreed that other communities currently implementing corrosion control treatment and change sources will need to continue to provide corrosion control treatment and conduct monitoring to determine whether the treatment is optimized with the new source water quality.
- Region 5 will research and get back to MDEQ on the 141.81 (3)(b)(5) citation and the ability to waive a CCT study.

DRAFT

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, October 07, 2015 10:01 AM
To: Rosenthal, Adam (DEQ); Rennaker, Joanne (DEQ)
Subject: FW: Project Number for City of Flint Drinking Water

Importance: High

See below. As Kathy states you can send a summary of past time and they will correct DCDS.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Tetzlaff, Katherine (DEQ)
Sent: Wednesday, October 07, 2015 7:28 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: FW: Project Number for City of Flint Drinking Water
Importance: High

I wasn't sure who all will need this so please forward as appropriate. The department would like to capture our costs related to the Flint situation. The below project number has been established. You can use this with any account coding that you would normally be using for DCDS or travel expenses. As I understand it, we also want to go back and capture as much as we can prior to this date. If you would process payroll corrections to add this project number, that would be helpful. If there is travel, let us know so we can correct it. We can also do the DCDS corrections for you if you provide the dates and hours that should be charged.

With year-end, the sooner the better. Thanks

From: Lundy, Anastasia (DEQ)
Sent: Tuesday, October 06, 2015 4:00 PM
To: Jackson, Michael (DEQ); Lundy, Anastasia (DEQ); Marinangeli, Lois (DEQ); Renteria, Sylvia (DEQ); Tetzlaff, Katherine (DEQ)
Cc: Austin, Dawn (DEQ); Bradsher, Esther (DEQ); McDonald, Paul (DEQ)
Subject: Project Number for City of Flint Drinking Water
Importance: High

Hello all. If your division incurs expenditures related to the City of Flint drinking water situation, we have established a central project number to track as many of the costs as possible department-wide. This can be used for both payroll and non-payroll charges. *Exception: As usual, if you are using federal grants to fund the work/purchase, please use the appropriate grant project number instead of this central number.*

Project #: 900040-00, City of Flint Drinking Water

Thanks everyone!

*Anastasia M. Lundy, Administration Section Chief
Remediation & Redevelopment Division
Michigan Department of Environmental Quality
Phone: 517-284-5129 / Fax: 517-373-2637
Email: LundyA1@michigan.gov*

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, October 07, 2015 9:32 AM
To: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ)
Subject: FW: 2014 CCR Certification
Attachments: Scan014.PDF

Attached are the 2 CCR certs for the 2014 CCRs from Flint.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Brent Wright [<mailto:bwright@cityofflint.com>]
Sent: Wednesday, October 07, 2015 9:27 AM
To: Prysby, Mike (DEQ)
Subject: 2014 CCR Certification

Mike,

Attached are the 2014 CCR certifications you requested.

Thank you

--

Brent Wright
Water Plant Supervisor
City of Flint
4500 N. Dort Hwy.
Flint, MI. 48505
Ph: 810.787.6537 ext. 3510
Fx: 810.787.3710



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
**CONSUMER CONFIDENCE REPORT FOR COMMUNITY WATER SUPPLY
CERTIFICATE OF DISTRIBUTION**

Issued under authority of 1976 PA 399 and Administrative Rules, as amended.

Failure to submit certification is a violation of the Act and may subject the water supply to enforcement penalties.

Supply Name: City of Flint	County: Genesee	WSSN: 2310
Population: ☐ 500 or fewer people	☐ 501 – 9,999 people	☒ 10,000 or more people

Community water supplies must confirm that the Consumer Confidence Report (CCR) and any enclosed Public Notices (PN) or notices of CCR availability, have been distributed to customers by July 1 as required under administrative rules R 325.10415 and R 325.10404(4)(c). Supplies must also certify that the information contained in the CCR is correct and consistent with the compliance monitoring data previously submitted to the Michigan Department of Environmental Quality (DEQ). **Return the certification to the appropriate DEQ district office by October 1.** For addresses, visit www.michigan.gov/deq, click on Locations.

Method of delivery to DEQ	
☒ Mail ☐ Email ☐ Hand Delivery ☐ Other _____	Date delivered: September 8, 2015
Method of delivery to Local Health Department	
☐ Mail ☐ Email ☒ Hand Delivery ☐ Other _____	Date delivered: June 30, 2015
Method or combination of methods to directly deliver CCR to each bill paying customer. Check <u>all</u> that apply.	
☒ Mail or hand deliver a paper copy of CCR. Date(s) mailed or hand delivered: June 29, 2015	
☐ Mail or hand deliver notification that the CCR is available at a direct URL. Date(s) delivered to customers: _____	
☐ Email notification that CCR is available at direct URL. Date(s) emailed: _____	
☐ Email notification that CCR is attached to the email. Date(s) emailed: _____	
☐ Email notification that CCR is embedded in the email. Date(s) emailed: _____	
If using notification of CCR availability:	
1. Mail a paper CCR to customers who request it and to customers known to be incapable of receiving electronically.	
2. Include a copy of the notification to the DEQ district office with this certification form.	
3. Explain the nature of the notification, prominently display the direct URL, include statement how to request a paper copy.	
Example of Notification of CCR Availability Subject Line: 2012 Drinking Water Quality Report Available. Message: Your annual report on the source and quality of your drinking water is available on the Web at www.anytown.gov/waterqualityreport. To have a copy mailed to you, contact Anytown at 555-111-1111 or water@anytown.gov.	
☐ Option for supplies serving fewer than 10,000 persons: Publish entire report in newspaper, <u>and</u> notify customers via newspaper(s) in which CCR published, mail, email or hand delivery that individual copies will not be mailed, <u>and</u> include statement how to request a paper copy.	
Date(s) of publication: _____	
☐ Option for supplies serving 500 or fewer persons: Notify customers via mail, email, hand delivery or, with DEQ approval, posting in public places, that a copy of the report is available from the water supply on request.	
Date(s) of notification: _____	
Post on Internet (required for supplies serving $\geq 100,000$, optional for others)	
☐ Internet address: _____	Date accessible: _____
"Good Faith" efforts to reach non-bill-paying consumers (in <u>addition</u> to the method(s) above). Check <u>all</u> that apply.	
☐ Mail the report to all postal patrons. Zip codes and dates mailed: _____	
☒ Mail to each service connection physical address. Date(s) mailed: June 29, 2015	
☐ Advertise the availability of the report in the newspapers, on TV, and on the radio.	
☐ Publish the report in a local newspaper.	
☐ Post the report in public places such as cafeterias in public buildings, libraries, churches, and schools.	
☐ Deliver multiple copies for distribution by single-bill customers, e.g., apartments or private employers.	
☐ Deliver the report to community organizations.	
☐ Other: _____	
Send to the DEQ a copy of the news articles, a list of channels broadcast and dates, and a list of locations/organizations reports delivered to and dates.	
A Tier 3 Public Notice is Distributed with this CCR	
☐ This CCR is being used to deliver a Tier 3 Public Notice for one or more violations. To use this Tier 3 delivery option, the CCR must be directly delivered to each bill paying customer or, with DEQ approval, continuously posted, and must be issued within 12 months of learning of the violation. A copy of this form must be delivered to the DEQ within 10 days of delivering the CCR to customers to meet the public notification requirements.	
Name/Title: Brent Wright	Supervisor
Signature:	Date: September 8, 2015

See reverse side for U.S. EPA Expectations for Electronic Delivery of CCR



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
**CONSUMER CONFIDENCE REPORT FOR COMMUNITY WATER SUPPLY
CERTIFICATE OF DISTRIBUTION**

Issued under authority of 1976 PA 399 and Administrative Rules, as amended.

Failure to submit certification is a violation of the Act and may subject the water supply to enforcement penalties.

Supply Name: City of Flint	County: Genesee	WSSN: 2310
Population: ☐ 500 or fewer people	☐ 501 – 9,999 people	☒ 10,000 or more people

Community water supplies must confirm that the Consumer Confidence Report (CCR) and any enclosed Public Notices (PN) or notices of CCR availability, have been distributed to customers by July 1 as required under administrative rules R 325.10415 and R 325.10404(4)(c). Supplies must also certify that the information contained in the CCR is correct and consistent with the compliance monitoring data previously submitted to the Michigan Department of Environmental Quality (DEQ). **Return the certification to the appropriate DEQ district office by October 1.** For addresses, visit www.michigan.gov/deq, click on Locations.

Method of delivery to DEQ	
☒ Mail ☐ Email ☐ Hand Delivery ☐ Other _____	Date delivered: September 8, 2015

Method of delivery to Local Health Department	
☐ Mail ☐ Email ☒ Hand Delivery ☐ Other _____	Date delivered: July 20, 2015

Method or combination of methods to directly deliver CCR to each bill paying customer. Check <u>all</u> that apply.	
☒ Mail or hand deliver a paper copy of CCR. Date(s) mailed or hand delivered: July 17, 2015	
☐ Mail or hand deliver notification that the CCR is available at a direct URL. Date(s) delivered to customers: _____	
☐ Email notification that CCR is available at direct URL. Date(s) emailed: _____	
☐ Email notification that CCR is attached to the email. Date(s) emailed: _____	
☐ Email notification that CCR is embedded in the email. Date(s) emailed: _____	

If using notification of CCR availability:

1. Mail a paper CCR to customers who request it and to customers known to be incapable of receiving electronically.
2. Include a copy of the notification to the DEQ district office with this certification form.
3. Explain the nature of the notification, prominently display the direct URL, include statement how to request a paper copy.

Example of Notification of CCR Availability Subject Line: 2012 Drinking Water Quality Report Available.
Message: Your annual report on the source and quality of your drinking water is available on the Web at www.anytown.gov/waterqualityreport. To have a copy mailed to you, contact Anytown at 555-111-1111 or water@anytown.gov.

- ☐ Option for supplies serving fewer than 10,000 persons: Publish entire report in newspaper, and notify customers via newspaper(s) in which CCR published, mail, email or hand delivery that individual copies will not be mailed, and include statement how to request a paper copy.
Date(s) of publication: _____
- ☐ Option for supplies serving 500 or fewer persons: Notify customers via mail, email, hand delivery or, with DEQ approval, posting in public places, that a copy of the report is available from the water supply on request.
Date(s) of notification: _____

Post on Internet (required for supplies serving $\geq 100,000$, optional for others)

- ☒ Internet address: <https://www.cityofflint.com/wp-content/uploads/CCR-2014.pdf>
Date accessible: **July 1, 2015**

"Good Faith" efforts to reach non-bill-paying consumers (in addition to the method(s) above). Check all that apply.

- ☐ Mail the report to all postal patrons. Zip codes and dates mailed: _____
- ☒ Mail to each service connection physical address. Date(s) mailed: **July 17, 2015**
- ☐ Advertise the availability of the report in the newspapers, on TV, and on the radio.
- ☐ Publish the report in a local newspaper.
- ☐ Post the report in public places such as cafeterias in public buildings, libraries, churches, and schools.
- ☐ Deliver multiple copies for distribution by single-bill customers, e.g., apartments or private employers.
- ☐ Deliver the report to community organizations.
- ☐ Other: _____

Send to the DEQ a copy of the news articles, a list of channels broadcast and dates, and a list of locations/organizations reports delivered to and dates.

A Tier 3 Public Notice is Distributed with this CCR

- ☒ This CCR is being used to deliver a Tier 3 Public Notice for one or more violations. To use this Tier 3 delivery option, the CCR must be directly delivered to each bill paying customer or, with DEQ approval, continuously posted, and must be issued within 12 months of learning of the violation. A copy of this form must be delivered to the DEQ within 10 days of delivering the CCR to customers to meet the public notification requirements.

Name/Title: Brent Wright	Supervisor
Signature:	Date: September 8, 2015

See reverse side for U.S. EPA Expectations for Electronic Delivery of CCR

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, October 07, 2015 8:58 AM
To: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ)
Subject: FW: CCR's
Attachments: 2010 CCR.pdf; 2011 CCR.pdf; 2014 CCR - Detroit.pdf

Here are the Flint CCRs.....I expect the certs to arrive soon.

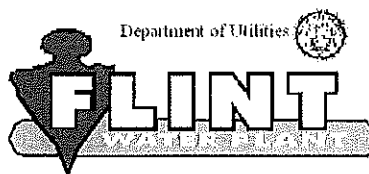
Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Wednesday, October 07, 2015 8:48 AM
To: Prysby, Mike (DEQ)
Subject: CCR's

Mike,

Here are the CCR's you were looking for. I have Brent getting the 2014 certification for you.

--
Mike Glasgow
Utilities Administrator
City of Flint
110I S. Saginaw St.
Flint, MI 48502
(810)766-7135 ext. 2602



**City of Flint
Water Plant & Facilities**

2010 Consumers Annual Report on Water Quality

The City of Flint Department of Utilities is dedicated to providing a high quality drinking water to the residents of the community. The Consumers Annual Report on Water Quality provides important information about your drinking water. This report includes information about the source of the water, contaminant & health related information, a chart summarizing United States Environmental Protection Agency (USEPA) required testing results, and a table giving explanations of important terms to understand when viewing the test results. The Flint Water Plant & Facilities maintains total compliance with all state and federal regulations and is committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water.

Information about your drinking water is available at the City of Flint web page on the Internet at www.cityofflint.com or by calling the Flint Water Plant & Facilities at (810) 787-6537. The Safe Drinking Water Hotline at (800) 426-4791 is a resource for health related questions and water quality issues. General drinking water information can be found on the USEPA web site at www.epa.gov/safewater/.

Water Source

The City of Flint purchases drinking water from the Detroit Water & Sewerage Department (DWSD) which operates several drinking water facilities. Following treatment to remove impurities, the water is pumped by DWSD to the Flint Water Plant, where the water is then monitored and distributed throughout the City.

The source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water & Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like to more information about this report or a complete copy of the report, contact the City of Flint Water Plant at (810) 787-6537.

Health Information

To ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by the public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- ♦ **Microbial contaminants;** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ♦ **Inorganic contaminants;** such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ♦ **Pesticides and herbicides;** which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- ♦ **Organic chemical contaminants;** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- ♦ **Radioactive contaminants;** which can be naturally occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint Department of Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize your potential exposure to lead in your water by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

The City of Flint Water Plant conducts lead & copper monitoring every three years from a limited number of consumer taps. The next monitoring will take place from July 1st through September 1st of 2011. If you are interested in using your residence as a sample location in this round of monitoring, please contact the City of Flint Water Plant laboratory at (810) 787-6537 to determine if your residence qualifies, and sample locations are still needed.

Lake Huron Water Treatment Plant 2010 Regulated Detected Contaminants Tables

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap								
Fluoride	Jan-Dec 2010	ppm	4	4	1.40	0.56-1.40	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	8/23/2010	ppm	10	10	0.32	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	6/9/2008	ppm	2	2	0.01	n/a	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System								
Total Trihalomethanes (TTHM)	Feb-Nov 2010	ppb	n/a	80	25.0	12.0-25.0	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	Feb- Nov 2010	ppb	n/a	60	18.0	7.0-18.0	No	By-product of drinking water disinfection
Disinfectant (Total Chlorine residual)	Jan-Dec 2010	ppm	MRDGL 4	MRDL 4	1.2	0.1-1.2	No	Water additive used to control microbes

2010 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.09 NTU	100%	No	Soil Runoff
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.			

2010 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	in one month 1%	No	Naturally present in the environment.
E.coli or fecal coliform bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E. coli positive.	entire year 0	No	Human waste and animal fecal waste.

2008 Lead and Copper Monitoring at Customers' Tap								
Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2008	ppb	0	15	0.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2008	ppm	1.3	1.3	0.027	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.								

Regulated Contaminant	Treatment Technique	Running Annual Average	Monthly Ratio Range	Violation Yes/No	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.				Erosion of natural deposits

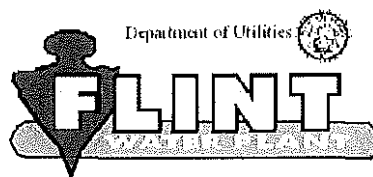
2010 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.45	Erosion of natural deposits

Collection, sampling result information and table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, Mt. Semegen.

Distribution & consumers tap sampling result information provided by the City of Flint Water Plant, Mt. Glasgow.

Key to Detected Contaminants Table		
Symbol	Abbreviation for	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MRDLG	Maximum Residual Disinfectant level goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
ppb	Parts per billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts per million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
ND	Not Detected	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total of all five.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total of all five.
pCi/l	picocuries per liter	A measure of radioactivity.
n/a	not applicable	
>	Greater than	



**City of Flint
Water Plant & Facilities**

2011 Consumers Annual Report on Water Quality

The City of Flint Department of Utilities is dedicated to providing a high quality drinking water to the residents of the community. The Consumers Annual Report on Water Quality provides important information about your drinking water. This report includes information about the source of the water, health information, a chart summarizing United States Environmental Protection Agency (USEPA) required testing results, and a table giving explanations of important terms to understand when viewing the test results. The Flint Water Plant & Facilities maintains total compliance with all state and federal regulations and is committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water.

Information about your drinking water is available at the City of Flint web page on the Internet at www.cityofflint.com or by calling the Flint Water Plant & Facilities at (810) 787-6537. The Safe Drinking Water Hotline at (800) 426-4791 is a resource for health related questions and water quality issues. General drinking water information can be found on the USEPA web site at www.epa.gov/safewater/.

Water Source

The City of Flint purchases drinking water from the Detroit Water & Sewerage Department (DWSD) which operates several drinking water facilities. Following treatment to remove impurities, the water is pumped by DWSD to the Flint Water Plant, where the water is then monitored and distributed throughout the City.

The source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water & Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from “very low” to “very high” based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like to know more information or a complete copy of the report, contact the City of Flint Water Plant at (810) 787-6537.

General Information

To ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by the public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- ◆ **Microbial contaminants;** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ◆ **Inorganic contaminants;** such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ◆ **Pesticides and herbicides;** which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- ◆ **Organic chemical contaminants;** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- ◆ **Radioactive contaminants;** which can be naturally occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint Department of Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize your potential exposure to lead in your water by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Lake Huron Water Treatment Plant 2011 Regulated Detected Contaminants Tables

Contaminant	Test Date	Units	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap								
Fluoride	08/14/2011	ppm	4	4	0.98	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	08/14/2011	ppm	10	10	0.30	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	6/9/2008	ppm	2	2	0.01	n/a	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System								
Total Trihalomethanes (TTHM)	Feb-Nov 2011	ppb	n/a	80	36.0	11.0 - 36.0	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	Feb- Nov 2011	ppb	n/a	60	14.0	6.0 - 14.0	No	By-product of drinking water disinfection
Disinfectant (Total Chlorine Residual)	Jan-Dec 2011	ppm	MRDGL 4	MRDL 4	1.10	0.30 – 1.10	No	Water additive used to control microbes

2011 Turbidity – Monitored every 4 hours at Plant Finished Water Tap			
Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.2 NTU	100%	No	Soil Runoff
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.			

2011 Microbiological Contaminants – Monthly Monitoring in Distribution System					
Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	0	No	Naturally present in the environment.
<i>E. coli</i> or fecal coliform bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. coli</i> positive.	0	No	Human waste and animal fecal waste.

2011 Lead and Copper Monitoring at Customers' Tap								
Contaminant	Test Date	Units	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2011	ppb	0	15	< 2.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2011	ppm	1.3	1.3	0.102	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.
*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.								

Regulated Contaminant	Treatment Technique	Running annual average	Monthly Ratio Range	Violation Yes/No	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.				Erosion of natural deposits

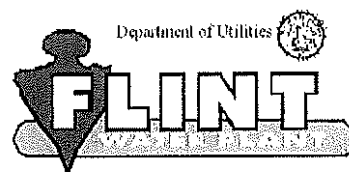
2011 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.76	Erosion of natural deposits

Collection, sampling result information and table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Senegen.

Distribution system sampling & result information (including lead & copper) provided by the City of Flint Water Plant, M Glasgow.

Key to Detected Contaminants Table		
Symbol	Abbreviation for	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MRDLG	Maximum Residual Disinfectant level goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
ppb	Parts per billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts per million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
ND	Not Detected	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total of all five.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total of all five.
pCi/l	picocuries per liter	A measure of radioactivity.
n/a	not applicable	
>	Greater than	



**City of Flint
Water Plant & Facilities**

2014 Consumers Annual Report on Water Quality

The City of Flint Department of Utilities is dedicated to providing high quality drinking water to the residents of the community. The Consumers Annual Report on Water Quality provides important information about your drinking water. This report includes information about the source of the water, health information, a chart summarizing United States Environmental Protection Agency (USEPA) required testing results, and a table giving explanations of important terms to understand when viewing the test results. The Flint Water Plant & Facilities operates and maintains a certified drinking water laboratory to assure compliance with all state and federal regulations and is committed to prompt and thorough notification to the consumers if there is any reason for concern about the quality of the drinking water.

Information about your drinking water is available at the City of Flint web page on the Internet at www.cityofflint.com or by calling the Flint Water Plant & Facilities at (810) 787-6537. The Safe Drinking Water Hotline at (800) 426-4791 is a resource for health related questions and water quality issues. General drinking water information can be found on the USEPA web site at www.epa.gov/safewater/.

Water Source

From January 1st through April 30th 2014, The City of Flint purchased drinking water from the Detroit Water & Sewerage Department (DWSD) which operates several drinking water facilities. Following treatment to remove impurities, the water is pumped by DWSD to the Flint Water Plant, where the water is then monitored and distributed throughout the City.

The source water comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water & Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. If you would like to know more information or a complete copy of the report, contact the City of Flint Water Plant at (810) 787-6537.

General Information

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by the public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- ♦ **Microbial contaminants;** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ♦ **Inorganic contaminants;** such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- ♦ **Pesticides and herbicides;** which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- ♦ **Organic chemical contaminants;** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- ♦ **Radioactive contaminants;** which can be naturally occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that the lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint Department of Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If you are concerned about elevated lead levels in your home's water, you can minimize your potential exposure to lead in your water by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

Lake Huron Water Treatment Plant 2014 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
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Inorganic Chemicals – Monitoring at the Plant Finished Water Tap

Fluoride	5/13/14	ppm	4	4	0.59	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5/13/14	ppm	10	10	0.31	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2014	ppb	n/a	80	33.0	10.0 - 48.5	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2014	ppb	n/a	60	15.8	8.0 - 19.0	No	By-product of drinking water disinfection

Disinfectant Residuals Monitoring in DWSD Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2014	ppm	4	4	0.82	0.64-0.94	No	Water additive used to control microbes

Regulated Contaminant	Treatment Technique							Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.							Erosion of natural deposits

2014 Turbidity – Monitored every 4 hours at Plant Finished Water Tap

Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.19 NTU	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2014 Microbiological Contaminants – Monthly Monitoring in Distribution System

Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	0	No	Naturally present in the environment.
<i>E. coli</i> Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. coli</i> positive.	0	No	Human waste and animal fecal waste.

2011 Lead and Copper Monitoring at Customers' Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2011	ppb	0	15	< 2.0	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2011	ppm	1.3	1.3	0.10	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.

2014 Radionuclides

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation yes/no	Major Sources in Drinking Water
Combined Radium Radium 226 & 228	5/13/14	pCi/L	0	5	0.86 + or - 0.55	No	Erosion of natural deposits

014 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.78	Erosion of natural deposits

Collection, sampling result information and table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Semegen

City of Flint sample result information provided by the City of Flint Water Plant, M. Glasgow.

2014 Key to the Detected Contaminant Tables		
Symbol	Abbreviation for	Definition/Explanation
>	Greater than	
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
mg/L	Milligrams per Liter	A milligram = 1/1000 gram 1 milligram per liter is equal to 1 ppm
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on total.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, October 02, 2015 9:17 AM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Lead & Copper Report
Attachments: Updated Final Report.pdf

Flint's updated PB/CU report

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Friday, October 02, 2015 9:02 AM
To: Prysby, Mike (DEQ)
Subject: Lead & Copper Report

Mike,

Here was the last version of the lead & copper report after talking with Steve and Adam a month ago.

--

Mike Glasgow
Utilities Administrator
City of Flint
1101 S. Saginaw St.
Flint, MI 48502
(810)766-7135 ext. 2602

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
**LEAD AND COPPER REPORT AND
CONSUMER NOTICE OF LEAD RESULT
CERTIFICATE FOR COMMUNITY WATER SUPPLY**



Issued under authority of 1976 PA 399, MCL 325.1001 *et al.*, and Administrative Rules, as amended.
Failure to submit this information is a violation of Act 399 and may subject the water supply to enforcement penalties.

Administrative Rule R 325.10710d requires water supplies to report lead and copper monitoring information within 10 days after the end of the monitoring period. This form may be used to meet this requirement. Submit the information to the appropriate Department of Environmental Quality (DEQ) district office. For district office addresses, visit www.michigan.gov/deq and click on Locations.

1. Water Supply Name: City of Flint Water Plant
2. County: Genesee 3. WSSN: 2310
4. Population: 99,763 5. Monitoring Period: From: 1/1/15 To: 6/30/15
6. Minimum # of Samples Required: 60 7. # of Samples Taken: 69
8. Name of Certified Laboratory: DEQ Drinking Water Laboratory

9. SAMPLE CRITERIA:

Yes	No	Explain No responses in Comments block.
☐	☒	a. Are the same sampling points used as in the previous monitoring period?
☐	☒	b. Are all samples from Tier 1 sites?
☒	☐	c. Are all samples from Tier 1, 2, or 3 sites giving Tier 1 priority?
☒	☐	d. If no Tier 1, 2, or 3 sites are available, do all sites have plumbing materials commonly found at other locations in the system?
☒	☐	e. Is the minimum number of lead service line samples taken (when applicable)?

For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

Comments: Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria, and due to population the number of samples required was reduced to 60.

10. NAME:

Name: Michael Glasgow
Title: Utilities Administrator Phone: 810-766-7135 Date: 8/20/2015

11. TAP SAMPLING DATA: (Use additional sheets as needed)

Water Supply Name/County City of Flint Water PlantWSSN 2310

RESULTS:

Sample Location	Sample Date	Sample Category ¹	Service Lines ²	Bldg Plumbing ²	Lead (ppb)	Copper (ppb)	Lab #
2205 Flusing Rd	2/15/15	1	L	C,P	N.D.	0.13	54663
1809 Stevenson St.	2/10/15	1	L	P	10	N.D.	54956
4202 Custer Ave.	3/4/15	1	L	C,P	6	0.27	56223
401 E. Newall St.	3/2/15	1	L	P	5	N.D.	56225
215 Browning Ave.	3/21/15	1	L	C,P	N.D.	0.16	56226
2615 Trumbull Ave.	2/27/15	1	L	C,P	3	N.D.	56227
201 Browning Ave.	3/5/15	1	L	P	N.D.	N.D.	56228
1224 Decker St.	3/17/15	1	L	C,P	13	0.10	57728
1220 Decker St.	3/17/15	1	L	P	4	N.D.	57730
1379 Washington Ave.	3/19/15	1	L	P	8	N.D.	57731
1383 Washington Ave.	3/19/15	1	L	C,P	6	0.17	57734
1372 Washington Ave.	3/19/15	1	L	C,P	2	0.14	57733
1367 Washington Ave.	3/17/15	1	L	P	1	N.D.	57735
1701 Marquette Dr.	3/14/15	1	L	C,P	1	0.19	57736
778 Bundy Ave.	3/24/15	1	L	P	N.D.	N.D.	58413
3714 Beecher Rd.	3/24/15	1	L	C	2	0.52	58414
1016 Ingleside Ave.	4/9/15	1	L	C,P	7	0.07	59749
1818 Rock Creek Ln.	4/6/15	1	L	C,P	3	0.11	59750
3010 Cheyenne St.	4/3/15	1	L	C,P	5	0.10	59751
2606 Mountain Ave.	4/15/2015	1	L	P	N.D.	N.D.	60546

¹ Sample Category: Enter a number 1 through 6 to designate the category of tap sample site. For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

² Materials used for service line and building plumbing: Enter C = copper; G = galvanized; L = lead; or P = plastic.

TO BE DETERMINED BY DEQ

	90 th percentile	Ave	Max	# > AL
Pb				
Cu				

11. TAP SAMPLING DATA: (Use additional sheets as needed)

Water Supply Name/County City of Flint Water PlantWSSN 2310

RESULTS:

Sample Location	Sample Date	Sample Category ¹	Service Lines ²	Bldg Plumb-ing ²	Lead (ppb)	Copper (ppb)	Lab #
2020 Crooked Ln.	4/24/15	1	L	C,P	5	0.10	61845
310 E. Moore St.	4/22/15	1	L	P	5	N.D.	61846
631 Alvord Ave.	5/6/15	1	L	P	42	N.D.	63410
216 Browning Ave.	5/7/15	1	L	C,P	22	0.31	63411
3714 Beecher Rd.	5/14/15	1	L	C,P	8	0.15	64283
912 Lexington Ave.	5/15/15	1	L	P	6	N.D.	64285
349 Robbie Ln.	5/31/15	1	L	P	2	N.D.	67428
353 Robbie Ln.	5/30/15	1	L	C,P	5	0.11	67427
341 Robbie Ln.	5/31/15	1	L	C,P	3	0.05	67426
328 Robbie Ln.	5/30/15	1	L	C,P	2	0.09	67425
357 Robbie Ln.	5/31/15	1	L	C	3	0.20	67424
344 Robbie Ln.	5/31/15	1	L	C,P	4	0.11	67423
1807 Oren Ave.	6/8/15	1	L	P	21	N.D.	68023
421 Lyon St.	6/14/15	1	L	C,P	7	0.14	68788
1528 Delaware Ave.	6/12/15	1	L	P	3	N.D.	68789
3811 Brentwood Dr.	6/14/15	1	L	P	42	N.D.	68790
1615 S. Franklin Ave.	6/14/15	1	L	P	N.D.	N.D.	68791
853 E. 7th St.	6/12/15	1	L	C,P	7	0.07	68792
1150 Woodside Dr.	6/14/15	1	L	P	29	N.D.	68793
547 Copeman Blvd.	6/15/14	1	L	P	18	N.D.	68794

¹ Sample Category: Enter a number 1 through 6 to designate the category of tap sample site. For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

² Materials used for service line and building plumbing: Enter C = copper; G = galvanized; L = lead; or P = plastic.

TO BE DETERMINED BY DEQ

	90 th percentile	Ave	Max	# > AL
Pb				
Cu				

11. TAP SAMPLING DATA: (Use additional sheets as needed)

Water Supply Name/County City of Flint Water PlantWSSN 2310

RESULTS:

Sample Location	Sample Date	Sample Category ¹	Service Lines ²	Bldg Plumbing ²	Lead (ppb)	Copper (ppb)	Lab #
2114 Flushing Rd.	6/30/15	1	L	P	5	0.05	71170
709 Frost St.	6/30/15	1	L	P	2	N.D.	72033
920 Stocker Ave.	6/21/15	1	L	P	1	N.D.	69622
742 Lincoln Ave.	6/19/15	1	L	P	2	N.D.	69623
3517 Bennett Ave.	6/24/15	1	L	C,P	3	0.06	69624
1730 Overhill Dr.	6/22/15	1	L	C,P	1	0.08	69625
2117 Stanford Ave.	6/23/15	1	L	C,P	5	0.08	69626
2432 Beta Ln.	6/21/15	1	L	P	N.D.	N.D.	69627
2023 Miller Rd.	6/21/15	1	L	C,P	3	0.06	69628
721 East St. Apt #2	6/25/15	4	L	C,P	10	0.16	70222
3814 Whitter	6/25/15	1	L	P	2	N.D.	70223
3120 Norwood	6/24/15	1	L	P	5	N.D.	70224
2122 Pierce St.	6/21/15	1	L	P	2	N.D.	70225
3521 Bennett Ave.	6/25/15	1	L	P	3	N.D.	70226
1602 Raspberry Ln.	6/24/15	1	L	P	N.D.	N.D.	70227
1809 Lynbrook	6/26/15	1	L	P	3	N.D.	70228
2112 Sherff	6/24/15	1	L	C,P	9	0.06	70229
1205 Blanchard Ave.	6/24/15	1	L	C,P	11	0.05	70230
860 Schafer St.	6/26/15	1	L	C,P	N.D.	0.06	70231
2110 Flushing Rd.	6/30/15	1	L	C	N.D.	0.10	71158

¹ Sample Category: Enter a number 1 through 6 to designate the category of tap sample site. For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

² Materials used for service line and building plumbing: Enter C = copper; G = galvanized; L = lead; or P = plastic.

TO BE DETERMINED BY DEQ

	90 th percentile	Ave	Max	# > AL
Pb				
Cu				

11. TAP SAMPLING DATA: (Use additional sheets as needed)

Water Supply Name/County City of Flint Water PlantWSSN 2310

RESULTS:

Sample Location	Sample Date	Sample Category ¹	Service Lines ²	Bldg Plumbing ²	Lead (ppb)	Copper (ppb)	Lab #
2300 Flushing Rd.	6/29/15	1	L	C	3	0.28	71159
2130 Flushing Rd.	6/28/15	1	L	C,P	6	0.05	71160
2202 Flushing Rd.	6/29/15	1	L	C,P	2	0.06	71162
2429 Flushing Rd.	6/30/15	1	L	C,P	N.D.	0.06	71163
4013 Brownell Blvd.	6/29/15	1	L	C,P	2	0.08	71165
2414 Flushing Rd.	6/30/15	1	L	P	N.D.	N.D.	71166
1914 Penbrook Ln	6/29/15	1	L	P	2	N.D.	71167
3901 Leedra St.	6/26/15	1	L	P	N.D.	N.D.	71168
3142 McClure	6/26/15	1	L	P	3	N.D.	71169

¹ Sample Category: Enter a number 1 through 6 to designate the category of tap sample site. For more information see *Instructions* paragraph 11, subparagraph "Sample Category."

² Materials used for service line and building plumbing: Enter C = copper; G = galvanized; L = lead; or P = plastic.

TO BE DETERMINED BY DEQ

	90 th percentile	Ave	Max	# > AL
Pb				
Cu				

Consumer Notice of Lead Result in Drinking Water

Water Supply Name: City of Flint
 County: Genesee WSSN: 2310
 Sample Location: 401 E. Newall St. Date Sampled: 3/2/15

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below.

Key to Table	Contaminant	AL	MCLG	Your Result
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. ppb: parts per billion or micrograms per liter.	Lead (ppb)	15	0	5
	Copper (ppb)	1300	1300	Not Detected

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

To reduce exposure to lead in drinking water:

- *Run your water to flush out lead.* Run the water until it becomes cold.
- *Use cold water for cooking and preparing baby formula.* Do not cook with or drink water from the hot water tap; lead dissolves more easily in hot water.
- *Do not boil water to remove lead.* Boiling water will not reduce lead levels.
- *Look for alternative sources or treatment of water.* If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- *Identify if your plumbing fixtures contain lead.* New faucets, fittings, and valves, may contain up to 8 percent lead including those advertised or labeled as "lead-free" and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Although the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead-contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure to lead may come from drinking water.

For more information, contact us at: City of Flint Water Plant (810) 787-6537.
 For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

Certification:

WSSN: 2310

I certify that this public water supply has provided the consumer notice of lead result to persons served at each of the taps that was tested, either by mail or by another method approved by the DEQ, within 30 days of knowing the result. The Notice includes required content.

Michael G. Lange
 Signature

UTILITIES ADMINISTRATOR
 Title

3/17/15
 Date Sent to Consumer

Reminder to water supplier: Complete this certification on only one (1) example copy of a notice sent to a consumer and submit it to the DEQ.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, September 15, 2015 12:10 PM
To: Graham, Lois (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Voice message about Flint - please return the call

I have spoken to Ms. Dotson and answered her questions. She is planning to contact the City as they are in charge of the water system.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Graham, Lois (DEQ)
Sent: Tuesday, September 15, 2015 8:05 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: Voice message about Flint - please return the call

I received a voice message overnight and request you return the call.
 Delores Dotson, of Flint, pleads there is an emergency about cutting off Detroit water and believes the city needs to get back on the Detroit water system. Her telephone number is 810-785-7335. She seemed upset and was quite firm.

Thanks,

Lois Elliott Graham, R.S., M.S.A.
 Office of Drinking Water & Municipal Assistance
 Field Operations Section
 Contamination Investigation Program
 P.O. Box 30241
 Lansing, Michigan 48909-7741
 Office: 517-284-6530
 Fax: 517-241-1328
grahaml@michigan.gov
 4-South, Pillar N8



Subscribe to our Environmental Health Email List by clicking on the red envelope

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, September 14, 2015 11:05 AM
To: Yanna Lambrinidou; Wurfel, Brad (DEQ)
Subject: RE: question about optimal WQP ranges for Flint's water

Dr. Lambrinidou,

All previous water quality parameter ranges would have been established for the City of Flint's wholesale finished water supplier, the Detroit Water and Sewerage Department, not the City of Flint itself.

As the City of Flint has not yet established optimized corrosion control treatment, the MDEQ is not yet at the point of regulatory requirements where the range of water quality parameters would be set.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Yanna Lambrinidou [<mailto:pnalternatives@yahoo.com>]
Sent: Thursday, September 10, 2015 11:11 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Subject: question about optimal WQP ranges for Flint's water

Good morning Mr. Wurfel and Mr. Busch,

As a member of the EPA National Drinking Water Advisory Council (NDWAC) Lead and Copper Rule (LCR) workgroup that just completed its recommendations to EPA about the agency's upcoming revisions to the LCR, I am watching with great interest and concern the developments in Flint in relation to lead. I am looking for information on the optimal water quality parameter (WQP) ranges that MDEQ has set for Flint's water. Are those posted online? If so, could you send me the link? If not, could you let me know what they are?

Thank you kindly,

Yanna Lambrinidou PhD
 Parents for Nontoxic Alternatives
 PO Box 6283
 Washington DC 20015
 P 202.997.1834
 B www.dcwasawatch.blogspot.com

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, September 10, 2015 8:10 AM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint Pb&Cu Results

I believe the determination was made not to redact as the address is only a single piece of information. "Collected By" information is not directly related to the collection address.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Benzie, Richard (DEQ)
Sent: Wednesday, September 09, 2015 5:21 PM
To: Poy, Thomas
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: Flint Pb&Cu Results

I don't think the addresses were redacted. Almost 25 years ago, we received an Attorney General's opinion that was issued in response to a FOIA request from the media for lead results from Flint that said we could withhold the addresses. However, I believe we have since determined we do not have that authority.

But I will have to ask the Lansing district staff to weigh in on this matter. Steve and Adam, did we redact addresses for this FOIA?

From: Poy, Thomas [<mailto:poy.thomas@epa.gov>]
Sent: Wednesday, September 09, 2015 3:41 PM
To: Benzie, Richard (DEQ)
Subject: RE: Flint Pb&Cu Results

Richard: Thank you for the analytical results. Were the addresses redacted before sending to the ACLU in response to their FOIA? I'm not comfortable sending addresses out, even if it is to a Congressman, so we are going to tell Congressman Kildee that he needs to call MDEQ's Congressional Liaison to get the results.

Tom

Tom Poy
 Chief, Ground Water and Drinking Water Branch
 USEPA - Region 5
 (312) 886-5991

From: Benzie, Richard (DEQ) [<mailto:BENZIER@michigan.gov>]
Sent: Wednesday, September 09, 2015 2:22 PM

To: Poy, Thomas

Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ); shекterl@michigan.gov

Subject: Flint Pb&Cu Results

Tom,

Here are the scanned analytical results from the latest round of compliance monitoring (January 1 – June 30, 2015) conducted in Flint. They were scanned for the purpose of responding to a Freedom of Information Act request.

I believe you already have a copy of the correspondence from our Lansing District Office notifying the city of Flint of the compliance determination that was based on these results.

If you need more information, contact Adam Rosenthal.

Richard

Richard Benzie, P.E., Chief
Field Operations Section
Office of Drinking Water and Municipal Assistance, MDEQ
517-284-6512

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, September 02, 2015 9:14 AM
To: Rennaker, Joanne (DEQ)
Cc: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: Flint TTHM 3rd quarter letter
Attachments: Flint DBP 3Q15-revised.doc

Jo Anne,

I believe the attached is ready to be finalized.

I would like a pdf of the signed letter to email over to members of the legislature.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

September 3, 2015

Mr. Brent Wright, Operations Supervisor
 City Of Flint – Department of Public Works
 Flint Water Plant
 4500 North Dort Highway
 Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: City of Flint – Water Supply
 Return to Compliance Total Trihalomethanes (TTHM)
 3rd Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the City of Flint (City) has returned to compliance with the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels for disinfection byproducts (MCLs)*, of the 1979 Administrative Code.

In accordance with Administrative Rule 610 (R 325.10610, *MCLs for disinfection byproducts*), the MCL for the disinfection byproduct TTHM is 0.080 milligrams per liter (mg/L). Compliance is determined based on a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the LRAA all eight of the City's TTHM compliance sampling sites now comply with this standard based on the last four quarterly monitoring periods, ending August 31, 2015. This return to compliance regarding TTHM's began on September 1, 2015, and will continue as long as the LRAA at each of the City's TTHM compliance sampling sites remain below this standard.

TTHM Results (mg/L)						
	11/20/14	2/17/15	5/18/15	8/18/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.059	0.0162	0.0514	0.0755	0.050	0.055
DBP2 Liquor Palace 3302 South Dort Highway	0.033	0.0168	0.0635	0.0532	0.042	0.047
DBP3 North Flint Auto 6204 North Saginaw St.	0.041	0.0149	0.0452	0.0426	0.036	0.036
DBP4 University Market 2501 Flushing Road	0.094	0.0245	0.0598	0.0706	0.062	0.056
DBP5 Taco Bell 3606 Corunna Road	0.034	0.0151	0.0547	0.0619	0.042	0.049
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.054	0.0192	0.0605	0.0595	0.048	0.050
DBP7 Salem Housing 3216 MLK Boulevard	0.050	0.0285	0.0727	0.0903	0.060	0.070
DBP8 BP Gas Station 822 South Dort Highway	0.036	0.0199	0.0461	0.0549	0.039	0.044

Mr. Brent Wright

2

September 3, 2015

Corrective measures by the City have been successful in achieving compliance with this standard. These measures have included replacement of anthracite filter media with granular activated carbon as well as the optimization of water treatment plant and distribution system processes and operations as recommended through Operational Evaluations conducted by the City. It is important that the City continue to follow these recommendations in order to limit disinfection byproduct formation and maintain compliance with the MCL LRAA standards. While the MCL LRAA standard has now been met at all eight compliance sampling sites, an individual TTHM concentration above 0.080 mg/L was measured at one location, DBP 7, during peak month sampling in August 2015.

Our Office encourages the City to continue informing customers about this updated water quality information and compliance with the TTHM MCL standard.

If you have any questions regarding this letter, please contact us at the numbers below; at prysbym@michigan.gov; or rosenthala@michigan.gov.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-290-8817

Adam Rosenthal, Environmental Quality
Analyst
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-284-6644

cc: Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Mr. Robert Bincsik, City of Flint
Mr. Howard Croft, City of Flint
Mr. Michael Glasgow, City of Flint
Genesee County Health Department
Mr. Stephen Busch, DEQ

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, August 31, 2015 1:42 PM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint THM

That's what I thought.... I will let Jeff Hansen know....and will send him a copy of our table.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Rosenthal, Adam (DEQ)
Sent: Monday, August 31, 2015 1:41 PM
To: Prysby, Mike (DEQ)
Subject: RE: Flint THM

yes, the codes they put on the samples don't match their plan, what we have in SDWIS, and they aren't even consistent in the errors from quarter to quarter.

From: Prysby, Mike (DEQ)
Sent: Monday, August 31, 2015 1:36 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint THM

Adam,

It looks like Flint is using the table with the mixed up site codes (again)....

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Hansen, Jeff [<mailto:jrhansen@lan-inc.com>]
Sent: Monday, August 31, 2015 1:33 PM
To: Prysby, Mike (DEQ)
Subject: RE: Flint THM

Mike,

I received the attached info from the City. I wanted to confirm the right numbers are lined up with the right sample sites since we had problems with that before and also because I thought you told me Salem Housing was the highest location at site 7. However, we have Salem housing as site 6.

Please let me know if the attached table is correct compared to your records.

Jeffrey R. Hansen
Senior Project Manager



**Lockwood, Andrews
& Newnam, Inc.**
A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532
T 810.820.2682 C 810.333.3201
www.lan-inc.com • JRHansen@lan-inc.com

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Monday, August 31, 2015 9:05 AM
To: Hansen, Jeff
Subject: RE: Flint THM

Jeff,

Just tried to call you...please call me at your earliest convenience.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Hansen, Jeff [<mailto:jrhansen@lan-inc.com>]
Sent: Monday, August 31, 2015 8:44 AM
To: Prysby, Mike (DEQ)
Subject: RE: Flint THM

Hi Mike,

Still nothing?

Jeffrey R. Hansen
Senior Project Manager

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Thursday, August 27, 2015 9:27 AM
To: Hansen, Jeff
Cc: Rosenthal, Adam (DEQ)
Subject: Re: Flint THM

Not yet....I will check with Adam Rosenthal, our EQA, when I return from to office this afternoon.

Sent from my iPhone

On Aug 27, 2015, at 8:19 AM, Hansen, Jeff <jrhansen@lan-inc.com> wrote:

Hi Mike,

Have you seen any results from the DEQ lab for Flint TTHM yet?

Jeffrey R. Hansen

Senior Project Manager

<image001.gif>

1311 South Linden Road, Suite B • Flint, MI 48532

T 810.820.2682 **C** 810.333.3201

www.jan-inc.com • JRHansen@jan-inc.com

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Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, August 31, 2015 1:36 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint THM
Attachments: Flint_Aug2015-THM-data.pdf

Adam,

It looks like Flint is using the table with the mixed up site codes (again)....

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

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Sent: Monday, August 31, 2015 1:33 PM
To: Prysby, Mike (DEQ)
Subject: RE: Flint THM

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Please let me know if the attached table is correct compared to your records.

Jeffrey R. Hansen
 Senior Project Manager



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From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Monday, August 31, 2015 9:05 AM
To: Hansen, Jeff
Subject: RE: Flint THM

Jeff,

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Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Hansen, Jeff [<mailto:jrhansen@lan-inc.com>]
Sent: Monday, August 31, 2015 8:44 AM
To: Prysby, Mike (DEQ)
Subject: RE: Flint THM

Hi Mike,

Still nothing?

Jeffrey R. Hansen
Senior Project Manager

From: Prysby, Mike (DEQ) [<mailto:PRYSBYM@michigan.gov>]
Sent: Thursday, August 27, 2015 9:27 AM
To: Hansen, Jeff
Cc: Rosenthal, Adam (DEQ)
Subject: Re: Flint THM

Not yet....I will check with Adam Rosenthal, our EQA, when I return from to office this afternoon.

Sent from my iPhone

On Aug 27, 2015, at 8:19 AM, Hansen, Jeff <jrhansen@lan-inc.com> wrote:

Hi Mike,

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Jeffrey R. Hansen
Senior Project Manager

<image001.gif>

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				2014			2015					
	No.	Address	Sample Location	5/21/14	8/21/14	11/21/14	2/18/15	5/18/15	8/18/15	Feb	May	Aug
										LRAA	LRAA	LRAA
TTHM	1	3719 Davison	McDonalds	162.4	145.3	58.6	16.2	51.4	75.5	95.6	67.9	50.4
	2	822 S. Dort	BP Gas Sta.	75.1	112	36.2	19.9	46.1	53.2	60.8	53.6	38.9
	3	3302 S. Dort	Liquor Palace	111.6	127.2	33.3	16.8	63.5	42.6	72.2	60.2	39.1
	4	3606 Corunna	Taco Bell	79.2	181.3	33.9	18.1	54.7	70.6	78.1	72.0	44.3
	5	2501 Flushing	Univ. Market	106.4	196.2	93.6	24.5	59.8	61.9	105.2	93.5	60.0
	6	3216 MLK	Salem Housing	82.2	112.4	50.1	28.5	72.7	59.5	68.3	65.9	52.7
	7	5018 Clio	Rite Aid	88.2	144.4	53.6	19.2	60.5	90.3	76.4	69.4	55.9
	8	6204 N. Saginaw	N. Flint Auto	96.5	118.3	41.1	14.9	45.2	54.9	67.7	54.9	39.0

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, August 31, 2015 1:31 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint Petition

More fyi....

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Swendsen, Kurt (DEQ)
Sent: Monday, August 31, 2015 1:27 PM
To: Prysby, Mike (DEQ)
Subject: Flint Petition

In case someone else hasn't sent this to you already, this MLive article is about a petition and a rally today:

on August 31, 2015 at 10:02 AM, updated August 31, 2015 at 11:09 AM
 Reddit Email



An empty one-gallon water jug is used as a sign of protest of Flint's water quality on in this 2015 Flint Journal file photo. A rally today, Aug. 31, is planned at City Hall. Flint Journal file photo *Flint Journal file photo*

FLINT, MI -- Three groups advocating the city end its use of the Flint River for drinking water are rallying today, Aug. 31, at City Hall and say they're delivering **26,000 petition signatures** to show the depth of their support.

Organizer Melissa Mays said Food & Water Watch, Water You Fighting For and the Coalition for Clean Water plan to hand deliver the petitions, which were collected online, to Mayor Dayne Walling and City Administrator Natasha Henderson at 10 a.m.

The petitions say in part, that "the Flint River clearly is not a safe, reliable source for the city's drinking water. It was as easy as pushing a button to disconnect from (the Detroit Water and Sewerage Department); it's time to push the button again, reconnecting Flint to DWSD and providing Flint residents with the clean, safe water they deserve.

"Please reconnect Flint to the Detroit Water and Sewerage Department immediately and make water safe and clean for all."

Flint has been in violation of the Safe Drinking Water Act since January because of high levels of total trihalomethanes (TTHM), a problem that arose after the city changed its drinking water source from Lake Huron to the Flint River.

Levels of TTHM, a byproduct of chlorinating river water, have dropped to allowable amounts in more recent tests, and the city has installed a new a \$1.5 million granulated active-charcoal filter in an effort to purify river water.

City officials have said Flint water is safe, but have mailed residents, warning of potential health problems related to long-term exposure to high levels of TTHM.

The use of the Flint River for drinking water is expected to end next year when the new Karegnondi Water Authority pipeline is expected to be put into service.

The project is a joint venture involving the city and Genesee County.

Kurt Swendsen
Community Water Supply
DEQ – Lansing District Office
(517) 525-1487

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, August 31, 2015 10:45 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Urgent: Independent Flint Water Study

fyi

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Wurfel, Brad (DEQ)
Sent: Monday, August 31, 2015 10:25 AM
To: Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wyant, Dan (DEQ); Prysby, Mike (DEQ)
Cc: Muchmore, Dennis (GOV); Hollins, Harvey (GOV); Murray, David (GOV); Wurfel, Sara (GOV); Jessica Brown; Brown, Eric (GOV)
Subject: Fwd: Urgent: Independent Flint Water Study

Liane / Steve, can you look into this situation as a priority?

Everyone else -- just got this from the ACLU. Call me if you have questions / counsel.

Thanks.
 b

Sent from my iPhone

Begin forwarded message:

From: Curt Guyette <cguyette@aclumich.org>
Date: August 31, 2015 at 10:18:34 AM EDT
To: "wurfelb@michigan.gov" <wurfelb@michigan.gov>
Subject: Urgent: Independent Flint Water Study

Mr. Wurfel,

Prof. Marc Edwards of Virginia Tech university has been leading a research project to conduct an independent study of lead in Flint's water. Working with a group of city residents, they have been collecting water samples from homes throughout the city. The study is still under way, but the results so far have been so disturbing that VT has begun posting results on the web in order to alert residents about how serious the problem may be.

This is what VT is reporting:

*Over the weekend we analyzed another 72 lead samples collected by Flint residents and mailed to VT. For the 120 samples analyzed to date, **forty two percent were over 5 ppb**, which suggests a serious lead in water problem according to our experience and criteria. Twenty-three (20% of those collected) also exceeded 15 ppb lead, suggesting a serious lead in water problem. That is, the Flint Citizen Science study to date, is finding results worse than the EPA standard which is applied to sampling "worst case" homes. The highest lead sampled in first draw so far was 158 ppb, and the highest sample after 45 second flushing is 1051 ppb. Six of 120 homes sampled (5%), had over 15 ppb lead even after 2 minutes of continuous flushing. The 90%ile lead level in the Flint Water Study is currently 30 ppb, which is double the EPA standard applied to "worst case" homes, and in a range where water consumption has caused lead poisoning in children and adverse pregnancy outcomes. Needless to say, these data are very worrisome.*

Here is the website containing the information.

I am writing about this for a story that will be posted tomorrow. If the city chooses to respond, I need to hear back from you by the end of the day today, Aug. 31.

Sincerely,

Curt Guyette

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, August 28, 2015 11:13 AM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Cc: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: Preliminary Flint TTHM results
Attachments: 3rd Qtr 2015 TTHM preliminary.doc

Richard and Liane,

A PRELIMINARY Flint TTHM compliance determination is attached. (The one month monitoring window doesn't officially end until Monday 8/31).

Note all 8 sites would now be in compliance with the LRAA, but we did have one sample this quarter over 80 ppb (site 7, 90.3 ppb). This will make messaging a little more difficult.

Shall we proceed, after August 31, to create a "TTHM return to compliance" letter?

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov

02310 – City of Flint 3rd Quarter 2015 TTHMs

August 28, 2015

TTHM Results (mg/L)						
	11/20/14	2/17/15	5/18/15	8/18/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.059	0.0162	0.0514	0.0755	0.050	0.055
DBP2 Liquor Palace 3302 South Dort Highway	0.033	0.0168	0.0635	0.0532	0.042	0.047
DBP3 North Flint Auto 6204 North Saginaw St.	0.041	0.0149	0.0452	0.0426	0.036	0.036
DBP4 University Market 2501 Flushing Road	0.094	0.0245	0.0598	0.0706	0.062	0.056
DBP5 Taco Bell 3606 Corunna Road	0.034	0.0151	0.0547	0.0619	0.042	0.049
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.054	0.0192	0.0605	0.0595	0.048	0.050
DBP7 Salem Housing 3216 MLK Boulevard	0.050	0.0285	0.0727	0.0903	0.060	0.070
DBP8 BP Gas Station 822 South Dort Highway	0.036	0.0199	0.0461	0.0549	0.039	0.044

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, August 26, 2015 3:29 PM
To: Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: FW: Follow Up from our Aug. 4th meeting

FYI. In case you get any calls from Ms. Walters.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

From: Shekter Smith, Liane (DEQ)
Sent: Tuesday, August 25, 2015 1:56 PM
To: lwalters313@gmail.com
Cc: Busch, Stephen (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Follow Up from our Aug. 4th meeting

Dear Ms. Walters,

I wanted to update you regarding our Department's findings related to questions raised during our meeting at the Governor's office on August 4. I apologize for the delay in getting back to you.

Lead and Copper Monitoring

Regarding Flint lead and copper compliance monitoring for the January – June 2015 period, the City has confirmed that all lead and copper samples collected throughout the City, whether routine sites or customer requests, were sent to the State of Michigan lab for analysis. Individual sample results are provided to the property owner within 30 days of receiving the lab results in accordance with the Michigan Safe Drinking Water Act (Public Act 399, 1976 Administrative Rule 410(5)). Results from the State of Michigan lab are provided directly to our Office.

Staff have confirmed that the lead 90th percentile compliance calculation of 11 parts per billion is based on 69 samples that met the appropriate sampling location site criteria, and met the sample collection site and collection protocol requirements of the Safe Drinking Water Act for this monitoring period. A minimum of 60 samples were required for this monitoring period. As indicated during the meeting, the City's sampling for lead complies with the Action Level standard of 15 parts per billion, but based on the population served by the City and these results, the City will need to make a recommendation to the MDEQ on how they will fully optimize their corrosion control treatment. These next steps continue to follow the requirements of the Lead and Copper Rule.

Samples collected at your residence of 212 Browning Avenue were not included this compliance determination as you utilize a whole home filter. As stated in the Michigan Safe Drinking Water Act (Public Act 399, 1976 Administrative Rule 710a, Lead and Copper in tap water; monitoring requirements) "Sampling sites may not include faucets that have point of use or point of entry treatment devices designed to remove inorganic contaminants." Such treatment alters the water chemistry and water quality such that it is no longer representative of public water from the City's distribution

system. Therefore, the City cannot use samples collected at your residence as part of its determination for public water system compliance with the lead or copper action level standard.

Sample Summary (samples taken at your residence)

For your information, we are providing the information that we've gathered regarding samples collected at your home. Our records indicate between February and June of this year there were six samples collected by either you or Mr. Mike Glasgow with the City of Flint, and submitted to the State Laboratory for analysis as follows:

February 11, Bathroom tap, collected at 10:20 AM by Mike Glasgow. This sample was analyzed for aesthetic metals (copper, iron, manganese, and zinc) which does not include lead analysis.

February 18, Kitchen tap, collected at 7:15 AM by you. This sample was analyzed for lead (104 parts per billion) and copper (non-detect).

February 25, Kitchen tap, collected at 10:26 AM by Mike Glasgow. This sample was analyzed for metals including lead. All results (including lead) were non-detect except for Barium 0.01 parts per million. The result for Barium was well below its maximum contaminant level of 2 parts per million.

March 3, Kitchen tap, collected at 6:00 AM by you. This sample was analyzed for lead (397 parts per billion) and copper (non-detect).

March 18, Kitchen tap, collected at 11:10 AM by Mike Glasgow. This sample was analyzed for lead (4 parts per billion) and copper (non-detect).

April 2, Pre-point of service, collected at 8:00 AM by you. This sample was analyzed for lead (707 parts per billion) and copper (110 parts per billion).

Lead Education/Outreach

As we discussed during the meeting, we support efforts to educate homeowners about the sources of lead in their private residence, provide guidance measures to reduce the potential for lead exposure, and provide information on resources for lead abatement. Along those lines, our Office has been in contact with the Department of Health and Human Services, Environmental Health Division, Healthy Homes Section and had some preliminary discussions about a public education and assistance campaign regarding household lead issues, guidance and abatement.

Lead monitoring by public water systems serves a dual purpose. The first purpose is to ensure the public water supply is adequately treating its water to address corrosion potential and help limit lead exposure. The second purpose is to inform homeowners about lead levels within their individual residence so that they can make educated choices regarding their own exposure risk.

pH Results

During the meeting concerns were also expressed regarding pH levels within customer plumbing systems. As you may know, pH has no associated contaminant level as it is simply a numeric scale used to specify the acidity or alkalinity of a solution. The City of Flint conducts daily monitoring of pH values on both its raw and finished (treated) water at the City's water treatment plant as part of its operations. The City is also required to conduct water quality parameter monitoring in the distribution system, which includes pH. Samples are analyzed in accordance with Standard Methods using properly calibrated analytical equipment. Results for pH from these samples are summarized below.

Since late April 2014 – June 2015, the following pH conditions were reported:

Water Treatment Plant – Finished Water plant tap pH range = 7.07 minimum to 9.9 maximum, overall average 7.7, measured daily. We believe the 9.9 is a one- time anomaly from softening treatment.

Distribution System – Water Quality Parameters taken from 25 sample sites located throughout and monitored quarterly

July – Sept. 2014: pH 7.71 average, range 7.56 – 7.86

Oct. – Dec. 2014: pH 7.88 average, range 7.62 – 8.10

Jan. – March 2015: pH 7.81 average, range 7.60 – 7.99

April – June 2015: pH 7.63 Average, range 7.48 – 7.80

In addition, the City's treated water contains alkalinity, which is a measurement of the buffering capacity of water to resist a change in pH. As you can see from the water quality parameter monitoring results above there has been very little change in pH within the City's distribution system. The pH levels described within customer site piping or premise plumbing systems are believed to be the result of onsite treatment and not representative of water quality shown to be occurring in the public water supply system.

Consumer Confidence Report

Finally, there was confusion during the meeting regarding the City's annual water quality report, the Consumer Confidence Report which we have since been able to clarify.

The City of Flint issued two separate Consumer Confidence Reports (CCR's) in 2015 covering the water quality data from 2014. One report was for the period of January – April 2014 when the City was obtaining water from Detroit (DWSD). And a second report was for the period April – December 2014 when the City was using the Flint River and its own Water Treatment Plant.

The CCR for DWSD water was mailed to customers in June. The Flint River based CCR was mailed to customers in mid-July, delayed due to issues with the printing contractor. We agree that having two separate reports caused confusion. We are working with the City to ensure both reports are posted to the City's website and both are made available when requested by customers. Should the City choose to create separate CCR's during the year that the City of Flint connects to the Karegnondi Water Authority we will work with the City to provide more clarity and try to have all material included in a single mailing.

The DWSD based CCR is the one community members had at the meeting, while the DEQ brought a copy of the Flint River based CCR. As separate and distinct sampling was done under each source, this explains the discrepancy in the values and monitoring periods being reported in the respective CCR's.

We appreciate your interest in these matters and hope this has addressed many of the questions brought up during our meeting. I would like to provide this information to both Dr. Sullivan and Ms. Mayes, but I do not have their contact information. I'm hoping you can share this with them and any others that may be interested.

Sincerely,

Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
517-284-6543

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, August 17, 2015 2:36 PM
To: Wurfel, Brad (DEQ)
Cc: Sygo, Jim (DEQ); Benzie, Richard (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ); Pallone, Maggie (DEQ); Shekter Smith, Liane (DEQ)
Subject: Flint Lead Monitoring Letter
Attachments: City of Flint PbCu15 8_17_15.pdf

Brad,

As there has been much interest regarding lead related to Flint drinking water, I have attached our latest letter which covers the most recent January – June 2015 monitoring period. The City is in compliance with the 15 part per billion action level for lead. Yet based on these results, the treatment cannot be deemed to provide fully optimized corrosion control treatment, and the City will need to recommend additional treatment to achieve this optimization under the Lead and Copper Rule requirements established under the Michigan Safe Drinking Water Act. This is all spelled out in the attached letter.

If you have any questions or would like any additional information you may contact me at the number below.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

August 17, 2015

Mr. Brent Wright
City of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

SUBJECT: Flint, City of WSSN: 02310
Lead and Copper Monitoring of Drinking Water Taps

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), received your report for the monitoring period January 1, 2015, through June 30, 2015.

Action Levels	Results this monitoring period			
	90th Percentile	# of Samples Above Action Level	# of Samples Required	# of Samples Collected
Lead 15 parts per billion (ppb)	11 ppb	6	60	69
Copper 1.3 parts per million (ppm)	0.16 ppm	0	60	69

Ninety percent or more of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399). These results must be reported on your 2015 Consumer Confidence Report (CCR) due to our office, your customers, and the local health department, by July 1, 2016. Also include the following statement in the CCR, regardless of the lead and copper levels:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.water.epa.gov/drink/info/lead>.

Mr. Brent Wright

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August 17, 2015

Recent changes to the Lead and Copper Rule (LCR) require the water supply to provide individual lead tap results to people who receive water from sites that were sampled, even if lead was not detected, within 30 days of learning of results. You must also send us a certification that you met all the delivery requirements along with a sample copy of your customer notice by three months after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice of Lead Result Certificate* in Microsoft Word or PDF format, visit <http://www.michigan.gov/deq>. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms under the Manuals, Forms and Brochures heading. Water supplies that fail to distribute the Consumer Notice of Lead Results must include the following statement in their CCR, "During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule."

While the City's LCR compliance monitoring has continued to meet action level requirements, the LCR also requires all large systems (those serving over 50,000 people) to optimize corrosion control regardless of their 90th percentile lead concentration. One way to demonstrate fully optimized corrosion control treatment is through two consecutive six month rounds of LCR compliance monitoring in which the difference between the 90th percentile level and the highest source water lead concentration is less than the Practical Quantitative Level for lead (0.005 milligrams per liter). Since the City did not meet these criteria in both the July – December 2014, and January – June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment within six months in accordance with requirements under Act 399, Administrative Rule 604f (R 325.10604f). **This recommendation must be provided to our office as soon as possible, but no later than January 1, 2016.**

However, given the past use of phosphate treatment by the Detroit Water and Sewerage Department (DWSD) to fully optimize corrosion control treatment when the City was a wholesale customer of DWSD, the ODWMA recommends the City select this as its recommended treatment option, and begin implementation as soon as possible to address ongoing concerns by customers regarding lead levels within their premise plumbing systems. Under the second step of this Rule, the DEQ can specify optimal corrosion control treatment.

Our office will inform you when monitoring needs to be conducted as part of the optimization of the implemented corrosion control treatment. Customer requested samples for lead shall continue to be collected and analyzed. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria.

Please contact me at 517-284-6644 or rosenthala@michigan.gov at your earliest convenience to discuss how the City will be complying with the above requirements.

Sincerely,



Adam Rosenthal, Environmental Quality Analyst
Lansing District Office
Office of Drinking Water and Municipal Assistance

cc: Mr. Michael Glasgow, City of Flint

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, August 12, 2015 11:06 AM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Cook, Pat (DEQ)
Subject: Draft 90th percentile letter
Attachments: Flint PbCu15-draft.doc

Richard,

Attached is our draft 90th percentile Pb/Cu letter for the City of Flint. Could you please forward this to Tinka Hyde and/or Tom Poy at EPA region V. We request any comments back by the close of business on Friday August 17. Thanks.

Stephen Busch, P.E.
MDEQ Lansing District Coordinator
Office of Drinking Water and Municipal Assistance
Lansing and Jackson District Supervisor
517-643-2314
buschs@michigan.gov



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

DRAFT for August 17, 2015

Mr. Brent Wright
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

Subject: City Of Flint WSSN: 02310
Lead and Copper Monitoring of Drinking Water Taps

We received your report for the monitoring period January 1, 2015, through June 30, 2015.

Action Levels	Results this monitoring period			
	90 th Percentile	# of Samples Above Action Level	# of Samples Required	# of Samples Collected
Lead 15 parts per billion (ppb)	11 ppb	6	60	69
Copper 1.3 parts per million (ppm)	0.16 ppm	0	60	69

Ninety percent or more of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. These results must be reported on your 2015 Consumer Confidence Report (CCR) due to our office, your customers, and the local health department, by July 1, 2016. Also include the following statement in the CCR, regardless of the lead and copper levels:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at <http://water.epa.gov/drink/info/lead>.

Recent changes to the Lead and Copper Rule (LCR) require the water supply to provide individual lead tap results to people who receive water from sites that were sampled, even if lead was not detected, within 30 days of learning of results. You must also send us a certification that you met all the delivery requirements along with a sample copy of your customer notice by 3 months after the end of the monitoring period. To download the *Lead and*

Mr. Brent Wright

2

August 17, 2015

Copper Report and Consumer Notice of Lead Result Certificate in Microsoft Word or PDF format, visit <http://michigan.gov/deq>. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms. Water supplies that fail to distribute the Consumer Notice of Lead Results must include the following statement in their CCR, "During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule."

While the City's LCR compliance monitoring has continued to meet action level requirements, the LCR also requires all large systems (those serving over 50,000 people) to optimize corrosion control regardless of their 90th percentile lead concentration. One way to demonstrate fully optimized corrosion control treatment is through two consecutive six month rounds of LCR compliance monitoring in which the difference between the 90th percentile level and the highest source water lead concentration is less than the Practical Quantitative Level for lead (0.005 mg/l). Since the City of Flint did not meet these criteria in both the July – December 2014, and January – June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment within six months in accordance with requirements under the Michigan Safe Drinking Water Act, Administrative Rule 604f (R 325.10604f). **This recommendation must be provided to our office no later than December 1, 2015.**

However, given the past use of phosphate treatment by the Detroit Water and Sewerage Department (DWSD) to fully optimize corrosion control treatment when the City of Flint was a wholesale customer of DWSD, this Office is recommending the City consider the selection and recommendation of this treatment option, and begin implementation as soon as possible to address ongoing concerns by customers regarding lead levels within their premise plumbing systems.

Further compliance monitoring of your water system for lead and copper will not be required until any additional corrosion control treatment has begun. We will inform you when monitoring is again required. However, customer requested samples for lead shall continue to be collected and analyzed. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria.

If you have any questions, please contact me at the number or email listed below.

Sincerely,

Adam Rosenthal, EQA
Office of Drinking Water and Municipal Assistance
Lansing District
517-284-6644
rosenthala@michigan.gov

ar/jlr
Enclosures

cc: Mr. Michael Glasgow, City of Flint

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Monday, August 10, 2015 3:09 PM
To: Rennaker, Joanne (DEQ)
Cc: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: Flint lead FOIA emails
Attachments: HIGH LEAD: FLINT Water testing Results; RE: HIGH LEAD: FLINT Water testing Results; HIGH LEAD: FLINT Water testing Results; Re: HIGH LEAD: FLINT Water testing Results; Re: HIGH LEAD: FLINT Water testing Results; Lead levels still high at Ms. Walters' home; RE: Flint Corrosion Control?; April 27 Flint Sampling Update from Miguel; more customer lead samples over the AL?; 6/30 & 7/1/15 deadlines; Re: 6/30 & 7/1/15 deadlines; Flint lead sampling results?; RE: HIGH LEAD: FLINT Water testing Results; RE: Flint lead sampling results?

Jo Anne,

Attached are all of the requested information I have via my email account.

I have included emails regarding analysis at 212 Browning Avenue. While these were not allowed to be included in the compliance determination, they were collected during the monitoring period. Most of the emails are between DEQ and EPA.

I spent 1 hour of time to address this FOIA request.

Stephen Busch, P.E.
 MDEQ Lansing District Coordinator
 Office of Drinking Water and Municipal Assistance
 Lansing and Jackson District Supervisor
 517-643-2314
buschs@michigan.gov

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results
Attachments: 212 Browning (Pb & Cu).pdf; Flint Technical Advisory Team List_R1.pdf

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with LeeAnn Walters since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb**. She has 2 children under the age of 3... Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Ms. Walters' drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:
 LeeAnn Walters
 212 Browning Ave
 Flint, MI 48507
 616-212-6233
Lwalters313@gmail.com

Jennifer

From: Lea Moste [<mailto:lwalters313@gmail.com>]
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

----- Forwarded message -----

From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM

Subject: Re: Water testing Results

To: "Lea Moste" <lwalters313@gmail.com>

Cc:

Lee,

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee,

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Lea Moste <lwalters313@gmail.com> wrote:

Mike,

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Mike

Consumer Notice of Lead & Copper Results in Drinking Water

Water Supply Name: City of Flint
 County: Genesee WSSN: 2310
 Sample Location: 212 Browning Date Sampled: 2/18/2015

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below.

Key to Table	Contaminant	AL	MCLG	Your Result
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water which there is no known or expected risk to health. MCLG's allow for a margin of safety. ppb: parts per billion or micrograms per liter.	Lead (ppb)	15	0	104
	Copper (ppb)	1300	1300	Not Detected

Lead can cause serious health problem if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects on the brain with lower IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

To reduce exposure to lead in drinking water:

- *Run your water to flush out lead.* Run the water until it becomes cold.
- *Use cold water for cooking and preparing baby formula.* Do not cook with or drink water from the hot tap; lead dissolves more easily in hot water.
- *Do not boil water to remove lead.* Boiling water will not reduce lead levels.
- *Look for an alternative sources or treatment of water.* If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- *Identify if your plumbing fixtures contain lead.* New faucets, fittings, and valves, may contain up to 8 percent lead including those advertised as lead-free" and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Although the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure to lead may come from drinking water.

For more information, contact us at: **City of Flint Water Plant (810)787-6537.**

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**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY**

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
FAX: (517) 335-8562

Sample Number
LF54945

Official Laboratory Report

Report To: **MIKE GLASGOW**
4500 N DORT HWY
FLINT MI 48505

System Name/Owner: **CITY OF FLINT**
Collection Address: **212 BROWNING AVE, FLINT**
Collected By: **LEANNE WALTERS**
Township/Well#/Section: **//**
County: **Genesee**
Sample Point: **KITCHEN**
Water System: **Treated Public Distribution System**

WSSN/Pool ID: **2310**
Source: **TYPE I**
Site Code:
Collector: **Private Citizen**
Date Collected: **02/18/2015 07:15**
Date Received: **02/19/2015 11:13**
Purpose: **Routine Monitoring**

TESTING INFORMATION			REGULATORY INFORMATION			
Analyte Name	Result (mg/L)	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
Copper	Not detected	02/20/2015	0.05	1.3	EPA 200.8	7440-50-8
Lead	0.104	02/20/2015	0.001	0.015	EPA 200.8	7439-92-1

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in accordance with the Safe Drinking Water Act, 40 CFR parts 141-143, and other regulatory agencies as appropriate.

Your local health department has detailed information about the quality of drinking water in your area. If you have concerns about the health risks related to the test results of your sample, please contact the Environmental Health Section through the address and telephone number listed below:

Genesee County Health Dept.
630 South Saginaw
Flint, MI 48502-1540
810 257-3603

CAS# : Chemical Abstract Service Registry Number
MCL : Maximum Contaminant Level
AL : Action Level
RL : Reporting Limit

mg/L : milligrams / Liter (ppm)
ppm : parts per million
MPN : Most Probable Number
CFU : Colony Forming Unit

Laboratory Contacts
Drinking Water Unit Mgr: Julia Pieper
Systems Mgmt. Unit Mgr: George Krisztian

City of Flint / Veolia Technical Advisory Committee

	COMPANY	NAME	TITLE	PHONE	DESIGNEE	CONTACT INFO	
1	General Motors	Randy Tanner	Head of Engineering	810-577-8552			Yes
2	MSU - Lansing	Dr. Joan Rose	Chair in Water Research	517-432-4412	Dr. Joan Rose	rosejo@msu.edu	Yes
3	Greater Flint Health Coalition	Kirk Smith	President	810-232-2228	Kirk Smith	ksmith@flint.org	Yes
4	County Drain Commissioner	Jeff Wright	Deputy Drain Commissioner	810-732-7870	John O'Brien	jfobrien@gcdcwws.com	Yes
5	U of M Flint	Michael Lane	Dir. Environmental Health & Safety	810-766-6763	Michael Lane	mlane@umflint.edu	Yes
6	Mott Community	Larry Kohler	Executive Director		Larry Koehler	larry.koehler@mcc.edu	Yes
7	Genesys Pace Hospital	Donna Cole	Property Manager	810-606-5611	Donna Cole	donna.cole@genesys.org	Yes
8	Hurley Hospital	Melanie Gavulic	President / CEO		Norb Birchmier	mgavuli1@hurleymc.com	Yes
9	McLaren Hospital	Don Kooy	President / CEO		Russell Hudson	don.kooy@mclaren.org	Yes
10	Genesee County Medical Society	Pete Levine	Executive Director	810-733-9925	Gerald Natzke	plevine@gcms.org	Yes
11	Dept. of Environmental Quality	Mike Prysby	District Supervisor	517-290-8817	Mike Prysby	prysbym@michigan.gov	Yes
12	Genesee Health Department	Jim Henry			Jim Henry	jhenry@gchd.com	Yes
	City of Flint	Howard Croft	DPW Director	810-577-1202	Howard Croft	hcroft@cityofflint.com	Yes
	City of Flint	Daugherty Johnson	Utilities Administrator	810-577-8906	Duffy Johnson	djohnson@cityofflint.com	Yes
	City of Flint	Brent Wright	Plant Supervisor	810-787-6537	Brent Wright	bwright@cityofflint.com	Yes
	City of Flint	Mike Glasgow	Asstant Plant Supervisor		Mike Glasgow	mglasgow@cityofflint.com	Yes

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Thursday, February 26, 2015 11:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

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Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

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However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with LeeAnn Walters since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb**. She has 2 children under the age of 3... Big worries here.

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Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

LeeAnn Walters
212 Browning Ave
Flint, MI 48507
616-212-6233
Lwalters313@gmail.com

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From: Lea Moste [<mailto:lwalters313@gmail.com>]
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

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From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
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On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

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Attachments: Flint lean level results Feb 2015 212 Browning (Pb Cu).pdf

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

Yes, the stagnation of the water would increase the lead levels, and I'm glad you're following up with the City to get the lead levels reduced for Mrs. Walters' home—which will hopefully be effective for her neighbors because they are also most likely being exposed to these high lead levels. Miguel reminded me this morning, there are no safe levels of lead in drinking water.

I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Mrs. Walters' home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Mrs. Walters' neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

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**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
DRINKING WATER LABORATORY**

USEPA Region V Drinking Water Cert. No. MI00003

P.O. Box 30270
Lansing, MI 48909
TEL: (517) 335-8184
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**Sample Number
LF54945**

Official Laboratory Report

Report To: **MIKE GLASGOW**
4500 N DORT HWY
FLINT MI 48505

System Name/Owner: **CITY OF FLINT**
Collection Address: **212 BROWNING AVE, FLINT**
Collected By: **LEANNE WALTERS**
Township/Well#/Section: **//**
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Sample Point: **KITCHEN**
Water System: **Treated Public Distribution System**

WSSN/Pool ID: **2310**
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Purpose: **Routine Monitoring**

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Laboratory Contacts
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Sent: Friday, February 27, 2015 5:59 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collecting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO₄ (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

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The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Mrs. Walters' neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer

Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

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Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

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The citizen's name is:
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 Flint, MI 48507
 616-212-6233
Lwalters313@gmail.com

Jennifer

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Subject: Fwd: Re: Water testing Results

----- Forwarded message -----

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 To: "Lea Moste" <lwalters313@gmail.com>
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Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:
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I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Lea Moste <lwalters313@gmail.com> wrote:

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Thank You
 LeeAnne Walters

On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee & Dennis,

Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, March 03, 2015 12:45 PM
To: Busch, Stephen (DEQ); Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ)
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve. I found that interesting that the Walters' interior piping is all PVC, and they have an iron pre-filter at the service connection. I remember in a discussion with Miguel, and maybe he can explain further, that systems with iron removal treatment had higher levels of lead at the tap, especially if the bacteria had been allowed to overgrow the filter. Seems there was a higher amount of lead particulate in the system. Miguel said in his email to us on 2/27 at 4:58am, that:

"Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In SW systems, the Fe typically is released from the water mains."

Perhaps the iron pre-filter is contributing to the high lead levels?

Jennifer

From: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Sent: Friday, February 27, 2015 12:48 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Benzie, Richard (DEQ); shekterl@michigan.gov
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.
- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.
- Has an Optimized Corrosion Control Program
- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.
- Has never had a 90th percentile lead AL exceedance
- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP
- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

212 Browning, the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab. While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnati Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov
(513) 569-7412

Jennifer

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collection on thirsting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO₄ (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO₄ for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral
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District Engineer

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517 290-8817

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Mike

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Wednesday, March 18, 2015 11:38 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Benzie, Richard (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel; Harris, Kimberly
Subject: Lead levels still high at Ms. Walters' home

I just received a call from LeeAnn Walters' home in Flint. She had her water tested again—this time the lead levels came back at 397 ppb. I will ask her to fax me the official lab results she has. Are you aware if the City flushed her system after the last test? Any thoughts on how to respond to her? I'm running out of ideas.

Jennifer

Rennaker, Joanne (DEQ)

From: Cook, Pat (DEQ)
Sent: Friday, May 01, 2015 11:38 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas; Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

Hi Miguel - sorry, I should have been more specific in my previous email. The rules you stated below allow large systems to be considered having optimal corrosion control if they have data from two consecutive 6 month monitoring periods that meet specific criteria. DEQ-ODWMA has not made a formal decision as to whether or not the City of Flint meets the exemption criteria or will be required to do a corrosion control study since Flint has only completed one round of 6 month monitoring. The City of Flint's second round of monitoring will be completed by June 30, 2015, and we will make a formal decision at that time. If my memory is correct, this is consistent with the process followed in the early 1990's for large systems when the Pb/Cu rule was first implemented. The Department waits until large systems complete both rounds of full scale, 6 month monitoring before making a decision about optimal corrosion control. If it is determined that Flint has to install corrosion control treatment, the rule allows up to 2 years to complete a study and 2 additional years to install the treatment unless we set a shorter time frame.

As Flint will be switching raw water sources in a just over one year from now, raw water quality will be completely different than what they currently use. Requiring a study at the current time will be of little to no value in the long term control of these chronic contaminants.

Finally, the City of Flint's sampling protocols for lead and copper monitoring comply will all current state and federal requirements. Any required modifications will be implemented at the time when such future regulatory requirements take effect.

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Saturday, April 25, 2015 10:11 AM
To: Cook, Pat (DEQ)
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTRC tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). $0.006 - 0 = 0.006$.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>

Sent: Friday, April 24, 2015 12:45 PM

To: Deltoral, Miguel

Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
Regulations Manager
Ground Water and Drinking Water Branch
77 West Jackson Blvd (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, June 02, 2015 8:28 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Benzie, Richard (DEQ); Phillip, Kris (DEQ); Shekter Smith, Liane (DEQ)
Subject: April 27 Flint Sampling Update from Miguel

Mea culpa.... I totally missed this email. Just saw it today. You already know the general information, but here is directly from Miguel.

Jennifer

From: Deltoral, Miguel
Sent: Monday, April 27, 2015 6:53 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Flint Sampling Update

Good morning, Tom

Just an update on the Flint sampling so folks know what's going on. As we had initially discussed, the only way to really see what the lead levels are throughout and where the lead is actually coming from at Ms. Walters' place is to do sequential sampling prior to the removal of the LSL. I spoke to Ms. Walters and she said that the water was shut off inside her home, so it can actually be turned back on, so Jennifer and I picked up sample bottles from the R5 office and we will be dropping them off at Ms. Walters place today on the way home from the MDEQ RTCR meeting. Pat Cook has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs in the city. We do not know how many LSLs there are in Flint and according to Ms. Walters, neither does the city. She said that they do not know where any LSLs are, based on their records, so other than what appears to be a very long one at Ms. Walters' place, we don't have confirmation of any others at this point. Since they were used extensively here in R5, it is likely there are more. No idea how many, though.

Marc Edwards (from Virginia Tech) was kind enough to offer to analyze this round of samples so she will shipping the samples to Marc for analysis. I asked that he measure phosphate as well, so that we have some data on that. As we discussed, R5 will send an additional set of bottles to Ms. Walters for the follow-up monitoring once the LSL is removed. I spoke to Mike Prysby on Friday and he said that the city was going to remove the LSL fully this Wednesday. I also brought a camera with me and will take some pictures while we are at Ms. Walters place as well.

Apparently, according to Ms. Walters, the water director appears to be telling residents that the high lead from Ms. Walters residence is from the internal plumbing and that a reporter she was talking to, as well as others, has confirmed that this is what residents are being told. Ms. Walters indicated that the line coming into the home appears to be galvanized pipe. If this is true, it is possible that her portion of the service line, from the home to the property line, is not lead and that the city-owned portion of the service line is the only source of lead here. The sample results should help to clarify where the lead is coming from.

Call me on the cell if you need to: 312.659.5827

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Thursday, June 04, 2015 4:06 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Deltoral, Miguel; Poy, Thomas
Subject: more customer lead samples over the AL?

I talked with Miguel this week; he learned that there have been 2 more customer-requested lead samples that have come back over the AL: 22ppb and 40 ppb. These were customer-requested samples taken by Mike Glasgow and analyzed at the Flint lab. When I receive the lab reports, I'll email them to you—or Mike Glasgow should have copies of all the customer-requested lead sample results he's taken. Greg Waldorf, the contractor that replaced Ms. Walters' service line on Wed May 6, said that many of the customer services are galvanized from the customer to the water main, but they also have a lead line that connects the shut-off valve with the water main—which would make the lead piping City-owned.

Jennifer

Rennaker, Joanne (DEQ)

From: Rosenthal, Adam (DEQ)
Sent: Thursday, June 25, 2015 10:48 AM
To: Mike Glasgow; 'bwright@cityofflint.com'
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: 6/30 & 7/1/15 deadlines
Attachments: Flint-2015-04-03-LT2ESWTR.pdf

Morning Mike & Brent, just wanted to remind you/confirm that Flint is on track for a few items.

1 – We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they will be below the AL for lead. As of now with 39 results, Flint's 90th percentile is over the AL for lead.

2 – LT2 source water monitoring plan, reminder that it is due to our office for review by 7/1/15 per Mike's 4/3/15 letter, (attached).

3 – Consumer Confidence Report, (CCR), has not been received yet – due to our office, Gen. Co. LHD & your customers by 7/1/15.

Please provide an update for the above items.

thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

April 3, 2015

Mr. Brent Wright
City of Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear: Mr. Wright

SUBJECT: Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule)
2nd Round of Source Water Monitoring Requirements

The LT2 Rule was promulgated by the United States Environmental Protection Agency on January 5, 2006. The Department of Environmental Quality (DEQ) adopted this rule into the Administrative Rules in December, 2009. All public water systems that are supplied by a surface water source, and systems supplied by a ground water source under the direct influence of surface water (GWUDI), are subject to this rule.

According to the LT2 Rule, systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. Please keep in mind that grandfathering data will not be accepted for the second round of monitoring. This monitoring includes at least one source water *Cryptosporidium*, *E. coli*, and turbidity sample per month for a period of 24 months for systems serving populations greater than 10,000 people. Systems will be assigned to a "treatment bin" based on the results of source water monitoring. The treatment bin specifies the level of *Cryptosporidium* removal and/or inactivation that the system must achieve.

Our records indicate that your system is required to comply with the source water monitoring requirements on Schedule 2 as stated below in Table 1. Therefore, your system is required to submit to the DEQ, a source water monitoring plan for each plant by July 1, 2015, and start the 2nd round of monitoring in October, 2015.

Table 1 – LT2 Milestone Dates for 2nd Round of Source Water Sampling

System Population	Schedule	Must submit Source Water Sampling Plan by...	Must begin second round of source water monitoring...
At least 100,000	1	January 1, 2015	April 1, 2015
50,000 – 99,999	2	July 1, 2015	October 1, 2015
10,000 – 49,999	3	July 1, 2016	October 1, 2016
<10,000	4	July 1, 2017	October 1, 2017

Mr. Brent Wright

2

April 3, 2015

Enclosed with this letter is a Source Water Sampling Plan template that you can complete and submit to this office to comply with the July 1, 2015, deadline. The template includes instructions and a worksheet that will assist the DEQ in determining if your plan meets the requirements of the LT2 Rule.

If you have any questions about this subject, feel free to contact me at 517-290-8817; prysbym@michigan.gov; or Department of Environmental Quality, Office of Drinking Water and Municipal Assistance, Lansing District Office, 525 West Allegan Street, 1st Floor South, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,



Michael F. Prysby, P.E.
District Engineer
Field Operations Section
Office of Drinking Water and
Municipal Assistance

Enclosures

cc: Mr. Howard Kroft, City of Flint

Rennaker, Joanne (DEQ)

From: Brent Wright <bwright@cityofflint.com>
Sent: Friday, June 26, 2015 12:00 PM
To: Rosenthal, Adam (DEQ)
Cc: Mike Glasgow; Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: Re: 6/30 & 7/1/15 deadlines

Adam,

1- We have more than 100 sample bottles out but are only seeing a couple returned daily.

2-Mike is working LT2 Source Water Monitoring Plan and should have it to you before the 1st.

3-Both the Lake Huron water source and Flint River water source along with the violation letter CCR's are at the printers, I will send you a copy of each one as soon as they drop the extras off to me. This is usually a day after they mail them out.

Thank you

On Thu, Jun 25, 2015 at 10:47 AM, Rosenthal, Adam (DEQ) <ROSENTHALA@michigan.gov> wrote:

Morning Mike & Brent, just wanted to remind you/confirm that Flint is on track for a few items.

1 – We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be below the AL for lead. As of now with 39 results, Flint's 90th percentile is over the AL for lead.

2 – LT2 source water monitoring plan, reminder that it is due to our office for review by 7/1/15 per Mike's 4/3/15 letter, (attached).

3 – Consumer Confidence Report, (CCR), has not been received yet – due to our office, Gen. Co. LHD & your customers by 7/1/15.

Please provide an update for the above items.

thanks,

Adam Rosenthal, EQA

MDEQ – Office of Drinking Water and Municipal Assistance

Lansing District – Constitution Hall 1SW

PO Box 30242

Lansing, MI 48909

517-284-6644

fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:

DEQ-DWMA-Lansing@michigan.gov

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Brent Wright
Water Plant Supervisor
City of Flint
4500 N. Dort Hwy.
Flint, MI. 48505
Ph: 810.787.6537 ext. 3510
Fx: 810.787.3710

Rennaker, Joanne (DEQ)

From: Crooks, Jennifer <crooks.jennifer@epa.gov>
Sent: Tuesday, July 14, 2015 3:34 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Bair, Rita
Subject: Flint lead sampling results?

Steve/Mike/Pat—Thank you for cluing me in to the fact that Liane and Tinka are talking about Flint next Tuesday. I guess it's just a manager discussion, from what I understand. I understand that Flint didn't get the minimum number of lead samples (100) for the second 6-month monitoring period that ended June 30, so I assume Flint is collecting the remaining samples now. Our Division Director, Tinka Hyde asked today if we will know what the lead results are from the second 6-month monitoring period. Perhaps you don't know what the results are for the remaining samples Flint began taking in July; but do you know what the other 80+ sample results are? Would you be able to share this information with us prior to the call on Tuesday? If not, Liane can share this info regarding the status of the sampling and the sample results with Tinka on Tuesday.

Thank you all for your hard work with Flint and with your management; I know this has not been an easy problem to deal with for anyone.

Jennifer

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, February 27, 2015 1:48 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.
- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.
- Has an Optimized Corrosion Control Program
- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.
- Has never had a 90th percentile lead AL exceedance
- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP
- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

212 Browning, the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab. While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnati Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov

(513) 569-7412

Jennifer

From: Deltoral, Miguel

Sent: Friday, February 27, 2015 4:58 AM

To: Crooks, Jennifer; Prysby, Mike (DEQ)

Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea

Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO4 (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally

reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

Yes, the stagnation of the water would increase the lead levels, and I'm glad you're following up with the City to get the lead levels reduced for Mrs. Walters' home—which will hopefully be effective for her neighbors because they are also most likely being exposed to these high lead levels. Miguel reminded me this morning, there are no safe levels of lead in drinking water.

I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Mrs. Walters' home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Mrs. Walters' neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)....as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL...and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Ms. Walter's concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Mrs. Walters.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with LeeAnn Walters since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb**. She has 2 children under the age of 3... Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Ms. Walters' drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or

Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

LeeAnn Walters
212 Browning Ave
Flint, MI 48507
616-212-6233
lwalters313@gmail.com

Jennifer

From: Lea Moste [<mailto:lwalters313@gmail.com>]
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

----- Forwarded message -----

From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: "Lea Moste" <lwalters313@gmail.com>
Cc:
Lee,

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee,

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Lea Moste <lwalters313@gmail.com> wrote:

Mike,

Thank you for the water reports and we already planned to see you on the 25th at 10:00am. I was wondering if you know who I need to talk to in the water plant to obtain the Annual Drinking Water Report from last year. According to the EPA website there is link to access but when you click on it, it cannot be accessed.

Was also curious if there is an expected time frame for this years report due to the switch. If you can be of any assistance I would appreciate it.

Thank You
LeeAnne Walters

On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee & Dennis,

Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, July 15, 2015 9:39 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ); Cook, Pat (DEQ)
Subject: RE: Flint lead sampling results?

Jennifer,

We will provide the 90th percentile when available, but at this point we do not anticipate any violations of the Lead and Copper Rule.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

From: Crooks, Jennifer [<mailto:crooks.jennifer@epa.gov>]
Sent: Tuesday, July 14, 2015 3:34 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Bair, Rita
Subject: Flint lead sampling results?

Steve/Mike/Pat—Thank you for cluing me in to the fact that Liane and Tinka are talking about Flint next Tuesday. I guess it's just a manager discussion, from what I understand. I understand that Flint didn't get the minimum number of lead samples (100) for the second 6-month monitoring period that ended June 30, so I assume Flint is collecting the remaining samples now. Our Division Director, Tinka Hyde asked today if we will know what the lead results are from the second 6-month monitoring period. Perhaps you don't know what the results are for the remaining samples Flint began taking in July; but do you know what the other 80+ sample results are? Would you be able to share this information with us prior to the call on Tuesday? If not, Liane can share this info regarding the status of the sampling and the sample results with Tinka on Tuesday.

Thank you all for your hard work with Flint and with your management; I know this has not been an easy problem to deal with for anyone.

Jennifer

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 4:08 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ)
Cc: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Cook, Pat (DEQ)
Subject: RE: City of Flint - Lead & Copper - FOIA Request

Richard,

I agree and the wording of Item #2 in the FOIA reads that way to me.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Benzie, Richard (DEQ)
Sent: Tuesday, July 28, 2015 4:03 PM
To: Prysby, Mike (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ)
Cc: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Cook, Pat (DEQ)
Subject: RE: City of Flint - Lead & Copper - FOIA Request

Mike,

When we discussed this matter earlier, I believed the request was limited to correspondence generated between January 1 and June 30, 2015, that met the conditions spelled out in their FOIA request. In reading your message below, I now suspect that they want any correspondence (with the designated entities) that is in regard to the lead and copper results from samples collected between January 1 and June 30, 2015, even if the correspondence was generated after that time frame. It appears to me the dates are bracketing the period of time for the lead and copper monitoring, not the time frame for correspondence regarding those results. So if we have correspondence with these entities (electronic or otherwise) dated this month (July 2015) that addresses results from samples collected in the first six months of 2015, we should provide them with a copy.

Richard

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 3:17 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ)
Cc: Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Cook, Pat (DEQ)
Subject: City of Flint - Lead & Copper - FOIA Request

The LDO has received a FOIA request from the ACLU for information concerning lead and copper records from the city of Flint. Specific information being requested is in 2 main parts. First.. provide a copy of all documented (electronic and hard copy) records of individual lead/copper sample results conducted in the city of Flint from January 1, 2015 through June 30th. Second...provide a copy of all communications (including electronic) between DEQ staff

with any city official or employee, outside contractors or consultants, and any US EPA employee regarding lead/copper water tests conducted in the city of Flint from January 1, 2015 through June 30th, 2015.

The initial deadline was July 30, 2015; however, our request for a 10-day extension to August 13, 2015 was approved. I will work with Joanne and Adam on compiling the information pertaining to the sample results/locations and hard copies of written correspondence. Also all e-mails (not internal) will need to be compiled as part of meeting this FOIA request. Richard and I reviewed his record of "sent" and "received" emails in Outlook earlier today and we believe that most of them are accounted for, however, there may be additional PB/CU electronic communication sent from other staff...including me. Each one of you should check on this for verification. We will most likely need to meet early in the week of August 10th to be verify that all of the information has been compiled prior to sending out the requested information.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 3:17 PM
To: Benzie, Richard (DEQ); Busch, Stephen (DEQ); Shekter Smith, Liane (DEQ); Wurfel, Brad (DEQ)
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Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 12:37 PM
To: Scherbarth, John (AG)
Cc: Rosenthal, Adam (DEQ); Busch, Stephen (DEQ)
Subject: RE: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

John,

The update accurately states that the results from all eight location were below the maximum contaminate level (MCL) in February's monitoring; however, it re-iterates that the annual quarterly average is still above the state's allowable level – MCL.

I would re-word the last sentence of the narrative to read: The city of Flint will return to compliance with the TTHM MCL after the Locational Running Annual Average (LRAA) no longer exceeds the 80 ug/L MCL at all eight locations. The LRAA is the running annual average of samples collected quarterly at each location.

I will need to confirm with the city as to whether both documents were sent out at the same time.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Scherbarth, John (AG)
Sent: Tuesday, July 28, 2015 12:12 PM
To: Prysby, Mike (DEQ)
Subject: RE: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

Were these both sent out at the same time?

And, isn't the Water Quality Update inaccurate since the City is not in compliance until the averages for a year are below MCLs?

I want to be certain that the following narrative is correct:

“During February, the detected level has been in an acceptable range at all eight sampling locations. Another sampling occurred during the month of May, and, again, the detected level was found to be in the acceptable range at all sampling locations. However, before the City of Flint can be considered to be in compliance, it must meet the compliance levels for a full year.”

John C. Scherbarth

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 12:02 PM
To: Scherbarth, John (AG)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

John,

Attached is a copy of the 2nd quarter TTH PN that was distributed to Flint city residents around April 1, 2015. Also, included with the PN is further discussion of the TTHM levels and the trend in concentration.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Scherbarth, John (AG)
Sent: Tuesday, July 28, 2015 11:26 AM
To: Prysby, Mike (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: FW: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

Mike

Can you please send me a PDF version of the notice that the City of Flint sent on or about April 1?

John C. Scherbarth

From: Rosenthal, Adam (DEQ)
Sent: Tuesday, July 28, 2015 11:14 AM
To: Scherbarth, John (AG)
Cc: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Subject: FW: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

John, the April 3rd letter was for a different rule and not a violation letter. The attached is the latest violation notice regarding the disinfection byproduct MCL.

thanks,

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Busch, Stephen (DEQ)
Sent: Tuesday, June 09, 2015 12:39 PM
To: Howes, Sarah (DEQ); Pallone, Maggie (DEQ); Wurfel, Brad (DEQ)
Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015

Attached is a copy of the Violation Notice and Public Notice Template being mailed to the City of Flint by the DEQ Office of Drinking Water and Municipal Assistance regarding an exceedance of the Maximum Contaminant Level (MCL) standard for Total Trihalomethanes at certain locations within the City's drinking water distribution system.

This violation notice is in response to updated monitoring completed in May 2015, which shows the locational running annual average for one of the City's eight compliance sampling locations continues to exceed MCL standard of 0.080 mg/L. It is however, important to note that all individual compliance sample results collected in both May and February were below the 0.080 mg/L levels.

You are being provided an electronic copy of this notice as exceedance of this drinking water standard is expected to generate inquiries from water system customers, news media, and the general public.

Sarah Howes or Maggie Pallone will be informing members of the Michigan legislature.

If you have any questions or would like any additional information, you may contact Michael Prysby, District Engineer, DEQ-ODWMA at 517-290-8817, or you may contact me at the number below.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 12:02 PM
To: Scherbarth, John (AG)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015
Attachments: Drinking water notice watermark.pdf; Flint Letter Color Header to Water Customers Final (1).pdf

John,
 Attached is a copy of the 2nd quarter TTH PN that was distributed to Flint city residents around April 1, 2015. Also, included with the PN is further discussion of the TTHM levels and the trend in concentration.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

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Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909

517-284-6644

fax: 517-241-3571

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Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ)

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Attached is a copy of the Violation Notice and Public Notice Template being mailed to the City of Flint by the DEQ Office of Drinking Water and Municipal Assistance regarding an exceedance of the Maximum Contaminant Level (MCL) standard for Total Trihalomethanes at certain locations within the City's drinking water distribution system.

This violation notice is in response to updated monitoring completed in May 2015, which shows the locational running annual average for one of the City's eight compliance sampling locations continues to exceed MCL standard of 0.080 mg/L. It is however, important to note that all individual compliance sample results collected in both May and February were below the 0.080 mg/L levels.

You are being provided an electronic copy of this notice as exceedance of this drinking water standard is expected to generate inquiries from water system customers, news media, and the general public.

Sarah Howes or Maggie Pallone will be informing members of the Michigan legislature.

If you have any questions or would like any additional information, you may contact Michael Prysby, District Engineer, DEQ-ODWMA at 517-290-8817, or you may contact me at the number below.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (May 21, August 21, November 20 of 2014, and February 17, 2015). The average of the results at ANY of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the MCL. The standard for TTHM is 80 micro grams per liter (ug/L). The location reporting the highest TTHM level was 105 ug/L; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

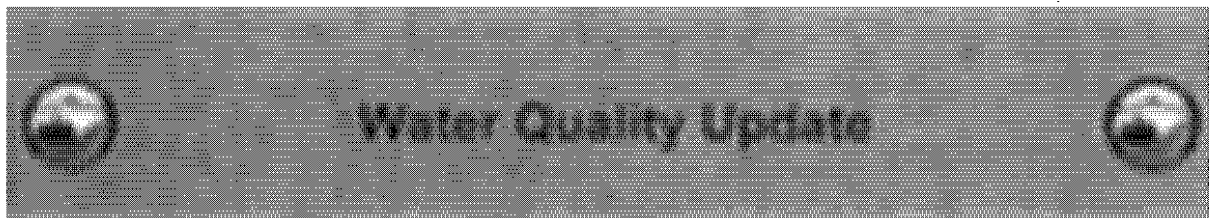
What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent individual sample results were all less than half the 80 ug/L standard, however since compliance is calculated using a locational running annual average (LRAA) of the most recent four quarters, we are still out of compliance with the MCL at two of eight locations.

For more information, please contact Mr. Brent Wright at 810-787-6537, or the Flint Water Plant at 4500 North Dart Highway, Flint, Michigan 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.



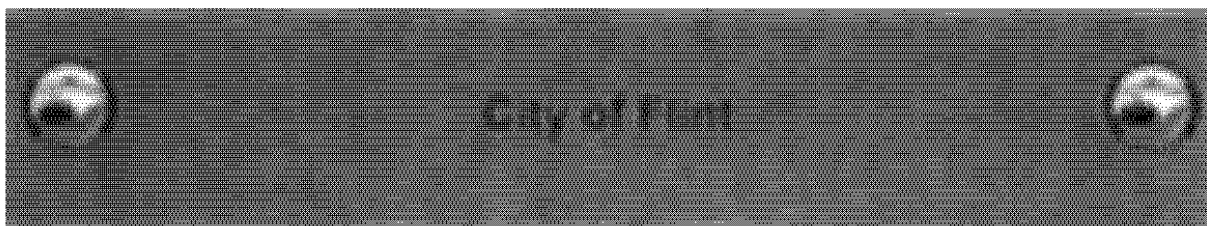
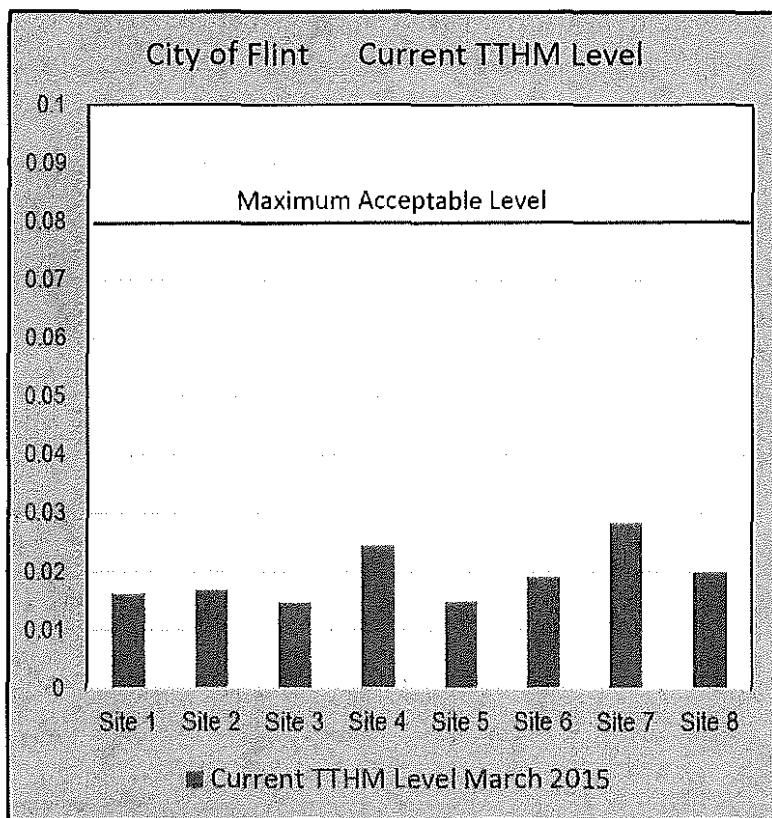
City of Flint Resident:

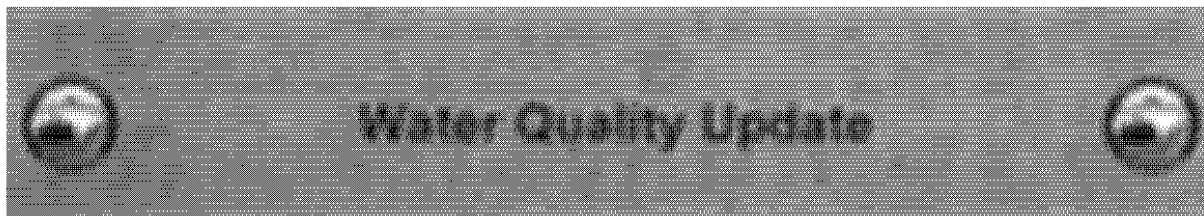
We are pleased to report that City of Flint water is safe and meets U.S. Environmental Protection Agency guidelines. While we continue to work on improving aesthetic qualities, such as discoloration or odor, you can be confident that the water provided to you today meets all safety standards. Maintaining safety and quality in our water is a top priority of the City.

We accomplished this by:

- Upgrading the ozone treatment process at the Water Treatment Plant
- Increasing water main/hydrant flushing to reduce stagnation
- Conducting additional testing of treatment to identify areas of improvement
- Improving water circulation by repairing valves and adjusting reservoir levels

Our most recent testing in February showed that every testing site was well below allowable levels, as shown below:

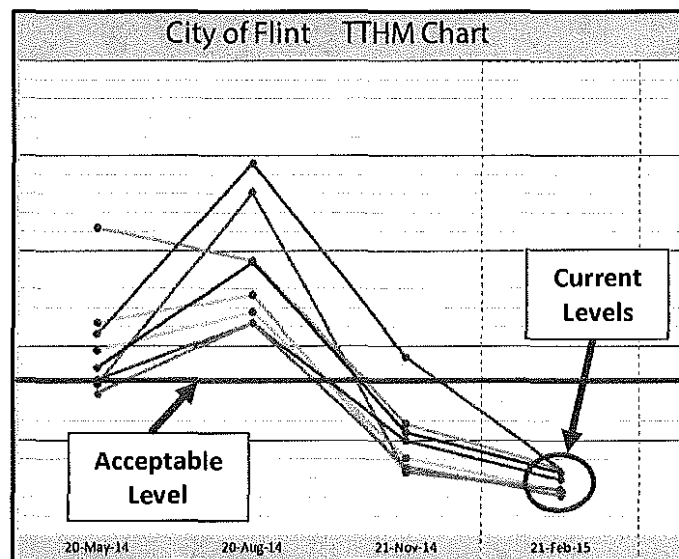




The Michigan Department of Environmental Quality (MDEQ) has acknowledged our progress:

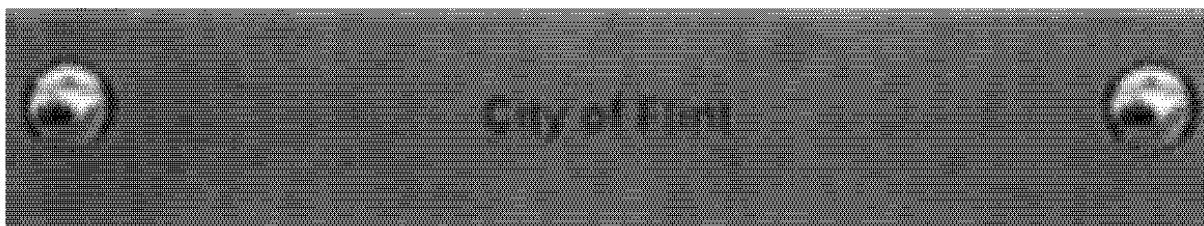
"We are encouraged by the results from the most recent round of compliance samples collected on February 17, 2015, which now show individual TTHM levels at less than half of the 0.080 mg/L standard at all locations throughout the City's system. Operational Evaluation Reports from December 2014, and February 2015, have identified possible causes and corrective measures for the previous elevated TTHM levels, which we encourage the City to continue implementing." -MDEQ

Notification is based on four quarters of test results. Because of last year's test results, the City's *annual* quarterly testing average is not yet below the state's allowable average and the City is required to issue the attached notice (*"Important Information about Your Drinking Water"*).



If you have any questions about this report or would like a test done at your home, free of charge, please call us at 810-787-6537.

Maintaining safe water and improving its quality is a top priority for all of us at the City of Flint, and we apologize for the concerns these notices have raised. We have taken many steps to improve the safety and quality of our water supply and will be taking more. As you may know, we have recently received a series of recommendations from several sources, including a report from international urban water system consultant, Veolia North America. We will be taking further action steps to assure that water remains safe and that water quality is improved, and we will be working with our recently created Citizen Advisory Committee and our Technical Advisory Committee as we progress. Please track our progress on our website cityofflint.com.



Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, July 28, 2015 11:42 AM
To: 'bwright@cityofflint.com'; Michael Glasgow
Cc: Rosenthal, Adam (DEQ)
Subject: Flint TTHM Public Notice - April 1, 2015

Brent, Michael

Can you send us a copy of the second TTHM public notice that the city distributed to city residents on or about April 1, 2015? This PN would reflect TTHM levels from monitoring through Feb. of 2015. Thanks.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, July 16, 2015 11:04 AM
To: Benzie, Richard (DEQ); Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: RE: TTHMs in Flint

I think it is important to point out that the standard is based on water representative of what is in the public distribution system, not site plumbing systems. I had a similar discussion with UofM Flint about levels analyzed in their plumbing system. While the MCLG's for the various forms is in some cases 0, my understanding is that exposure at 80 ppb is not directly tied to specific health effects, but rather what is essentially feasible for water systems to achieve at the current time while balancing the need for disinfection.

Per EPA,

EPA has regulated DBPs since 1979 to address health risks posed by a potential association between chlorinated drinking water and cancer, particularly bladder cancer. **Current reproductive and developmental health effects data do not support a conclusion at this time as to whether exposure to chlorinated drinking water or disinfection byproducts causes adverse developmental or reproductive health effects, but do support a potential health concern. Although uncertain, the combined health data warrant EPA's promulgation of the Stage 2 Disinfection Byproduct Rule to provide an incremental step towards mitigating potential risks.**

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Benzie, Richard (DEQ)
Sent: Wednesday, July 15, 2015 1:25 PM
To: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: TTHMs in Flint

Just had a call from a resident of Flint whose neighbor was told yesterday by the city to not drink the water because the TTHM level at her home was 95 ppb. The caller wanted to know if animals should be consuming the water. I told her she would have to consult with a toxicologist or someone familiar with veterinary medicine. I told her animals are less susceptible to some contaminants but more so to others, but as engineers and analysts, we were not the ones that would make that decision – we just pass it on if we find out.

She asked about other TTHM sampling locations and where they were in the city. I told her to contact one of you, starting with Adam.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, July 15, 2015 2:49 PM
To: Antil, Jeffrey (DEQ); Brennan, Patrick (DEQ); Drake, Jerry (DEQ); DuMont, Ralph (DEQ); Joseph, Mark (DEQ); Prysby, Mike (DEQ); Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Skinker, Bethel (DEQ); Swendsen, Kurt (DEQ)
Subject: ODWMA Manager's Meeting Highlights

Some highlights of the manager's meeting on Monday. We didn't get through a lot of the agendas and I missed the first part of the FOS due to the SMT meeting.

- DLARA Licensing letter (see associated email)
- Office of Auditor General ODWMA Audit – no decisions, still preliminary, but they are reviewing some Lansing District files.
- In service, August 13 at Lansing Comm. College – FOS/CWS has 20 minutes and my understanding is we (Lansing/Jackson) have 3 minutes of that time
- RRD site closure – we continue to work with RRD on site closure issues/process
- Enforcement – a number of cases statewide were updated
- Flint EPA Lead Issue – I was asked to provide a briefing on a high profile issue with Region 5 regarding lead in Flint
- Classification of Water System policy is under review/revision, draft will be provided for comment.

Let me know if you have any questions. Tracy Jo will send out a note on the minutes once they are final.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, June 25, 2015 9:46 AM
To: mglasgow@cityofflint.com
Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ)
Subject: LT2 monitoring plan due 7/1
Attachments: Cover letter 2nd round Sch 2 plants.docx; Schedule 2 LT2 Sampling Plan Template.docx; Round 2 Sched 2 Calendar.xlsx; Crypto Certified labs April 2015.pdf

Importance: High

Mike,

With Mike Prysby currently out of the office I'm not sure if you have already submitted this information, but Adam and I are not aware of our office receiving it.

The City of Flint water system falls into Schedule 2 of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR) and the sampling plan for conducting crypto monitoring must be submitted to our office for approval by July 1. The Sampling Plan Template is attached for your use along with the calendar spreadsheet and a list of certified crypto labs.

The attached cover letter also provides some additional info. Give Adam or I a call if you have any questions. Thanks.

This information was originally mailed to Brent and copied to Howard back on April 3.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314

Date:

To: Schedule 2 Plants

Address:

Dear :

SUBJECT: Long Term 2 Enhanced Surface Water Treatment Rule
2nd Round of Source Water Monitoring Requirements

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) was promulgated by the U.S. Environmental Protection Agency on January 5, 2006. The Michigan Department of Environmental Quality adopted this rule into the Michigan Administrative Rules in December, 2009. All public water systems that are supplied by a surface water source and systems supplied by a ground water source under the direct influence of surface water (GWUDI) are subject to this rule.

According to the LT2 Rule, systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. Please keep in mind that Grandfathering data will not be accepted for the second round of monitoring. This monitoring includes at least one source water *Cryptosporidium*, *E. coli*, and turbidity sample per month for a period of 24 months for systems serving populations greater than 10,000 people. Systems will be assigned to a "treatment bin" based on the results of source water monitoring. The treatment bin specifies the level of *Cryptosporidium* removal and/or inactivation that the system must achieve.

Our records indicate that your system is required to comply with the source water monitoring requirements on **Schedule 2** as stated below in Table 1. Therefore, your system is required to submit to the DEQ a source water monitoring plan for each plant by July 1, 2015, and start the 2nd round of monitoring in October, 2015.

Table 1 – LT2 Milestone Dates for 2nd Round of Source Water Sampling

System Population	Schedule	Must submit Source Water Sampling Plan by...	Must begin second round of source water monitoring...
At least 100,000	1	January 1, 2015	April 1, 2015
50,000 – 99,999	2	July 1, 2015	October 1, 2015
10,000 – 49,999	3	July 1, 2016	October 1, 2016
<10,000	4	July 1, 2017	October 1, 2017

Enclosed with this letter is a Source Water Sampling Plan template that you can complete and submit to this office to comply with the July 1, 2015 deadline. The template includes instructions and a worksheet that will assist the DEQ in determining if your plan meets the requirements of the LT2 Rule.

If you have any questions about this subject, please contact this office.



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE**

**LONG TERM 2 (LT2) SOURCE WATER SAMPLING PLAN TEMPLATE
Round 2 Sampling – Schedule 2 Systems**

A responsible official for the water system should submit the following information for DEQ review and approval.

A sampling plan packet consisting of:

1. The name of the Michigan Accredited Lab that will be performing the *Cryptosporidium* analysis. A list of approved labs can be obtained at <http://www.michigan.gov/deqlaboratoryservices>, click on Certifications, click on Drinking Water Analysis Laboratory, click on Cryptosporidium Laboratories.
2. The name of the Michigan Accredited Lab that will be performing the *E.coli* analysis. The laboratory that you select must be certified for *E.coli* enumeration (counting) using an U.S. EPA Approved Analytical Method.
3. Use the enclosed calendars for 2015 - 2017 to select or highlight the days between October 1, 2015, and September 30, 2017, on which you will be collecting your samples. You may also submit a one-page summary of the dates when samples will be collected in mm/dd/yy format. Samples must be collected within a five day window (the date you select, plus or minus 2 days).
4. A schematic indicating all raw water sources, chemical feed points and recycle locations along with an arrow indicating the exact sample location.
5. Completed Source Water Sampling Location Worksheet (provided on the following pages with instructions). Completed worksheets must be submitted to your DEQ Drinking Water District Engineer at least 3 months prior to the start of your system's required sampling period (7-1-15).
6. Signature of the responsible official for the water system acknowledging that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

LT2 SOURCE WATER SAMPLING LOCATION WORKSHEET INSTRUCTIONS:

If your treatment plant uses surface or GWUDI (groundwater under direct influence of surface water) sources, the LT2 rule requires that you monitor each source for *Cryptosporidium*, *E.coli* and turbidity once a month over a 2 year period. Please complete one column of this worksheet for each source.

<u>Source Name</u> - List all sources that will be monitored for <i>Cryptosporidium</i>, <i>E.coli</i> and turbidity. Blending of two or more sources is permitted as long as it is prior to any chemical addition and the blended portions are representative of normal operations. Next to each source, indicate if it is "Blended" or "Not Blended". <i>Please list information for each source in a separate column.</i>
<u>Source Type</u> – For each source, state if it's a Flowing Stream, Lake/Reservoir or GWUDI.
<u>Source Identification Number</u> - Be sure to list a source identification number for each source. Contact your local DEQ District office if you are uncertain of the source identification number for your source(s).
<u>Source Water Sampling Location</u> - Please describe, in detail, the specific location where you will be collecting your samples. If your system has more than one source, you should collect your samples after the raw water from all sources is combined. Your sampling point(s) should be representative of water entering the treatment plant. If you have a raw water off-stream reservoir or storage, samples should be collected after the raw water storage/reservoir. If the raw water is not combined prior to treatment, you may need to composite samples from each source (recommended), or analyze separate samples from each source and calculate a weighted average. <u>Include a plant schematic with an arrow indicating your proposed LT2 sampling location.</u> Example plant schematics are available upon request.
<u>Usage</u> - Please describe, in detail, the specific usage practices for each source – "All year" or "Part-Year/Seasonal" – for your source in recent years and describe the anticipated use in future years. For Part-Year/Seasonal sources, include the months of operation.
<u>Proportion of Flow</u> - Provide the most accurate information available regarding the % of average yearly flow that each source contributes. After providing information for all sources, please clearly indicate which source is your primary. Your primary source is the source that clearly provides the majority of water on a yearly basis to the treatment plant.
<u>Presedimentation, Bank Filtration, or Off-Stream Storage (if applicable)</u> - If you utilize any of these practices, please include them in your plant schematic and indicate if your samples will be collected before or after these practices.
<u>Recycling Practices (if applicable)</u> - If your plant recycles filter backwash water or other waste streams, you must indicate the point where the recycled backwash re-enters the treatment process. Your sampling point should be prior to the location where recycled streams come back into the treatment process. If you do not recycle, please state "Do not recycle" on your plant schematic. Samples collected after recycling will be invalidated; re-sampling will be required.
<u>Chemical Pretreatment</u> - On the plant schematic, indicate chemical feed locations from the intake to the plant. Your sampling point must be prior to any chemical treatment. If you feed any chemical(s) prior to your sampling point, you need to include this information in your sampling worksheet. Samples containing treatment chemicals will be invalidated; re-sampling will be required.
<u>Sample Compositing Procedure</u> - If a blended sample location prior to chemical addition is available, you should collect one blended sample from this location. If such a sample location is not available, plants may choose to sample each blended source separately. In this case, a composite sample representing % contribution of each source is needed. Describe Compositing in detail. A system may request to evaluate blended sources separately in order to provide additional information on <i>Cryptosporidium</i> loading for each source.

Note: Collection of at least one matrix spike sample for every 20 *Cryptosporidium* samples is required and should be documented in the sampling plan schedule (i.e. at least two matrix spike samples are needed for 24 *Cryptosporidium* samples).

Long Term 2 Enhanced Surface Water Treatment Rule Source Water Sampling Location Worksheet

Public Water System (PWS) Name: _____ WSSN: _____

Water Treatment Plant Name: _____

Water Treatment Plant ID: _____

Name and Phone Number of Person completing this Form: _____

Source Name		
Source Type Flowing Stream Lake/Reservoir GWUDI - Ground Water Under the Influence of Surface Water		
Source Identification Number		
Source Water Sampling Location (Raw water tap or sampled at source, indicate location on schematic)		
Usage Operational – almost all the time Demand – a few times a year Emergency – fewer than once per year		
Proportion of Typical Average Daily Flow (if only 1 source, 100%)	_____ %	_____ %
Pretreatment Practices (if applicable) None Presedimentation Bank filtration Other – write in		
Recycling Practices (yes or no) (If yes, describe and indicate location on schematic)		
Chemical Pretreatment (yes or no) (If yes, describe and indicate location on schematic)		
Compositing Procedure (yes or no) (If yes, state if using blended sample tap, composite sample, or weighted)		

Use additional sheets to provide more information.

I acknowledge that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

Signature

Date

LT2 SOURCE WATER MONITORING SAMPLING CALENDAR

PWS NAME:

PWSID:

2015

October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3	1	2	3	4	5	6	7			1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30						27	28	29	30	31		

2016

January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2		1	2	3	4	5	6			1	2	3	4	5
3	4	5	6	7	8	9	7	8	9	10	11	12	13	6	7	8	9	10	11	12
10	11	12	13	14	15	16	14	15	16	17	18	19	20	13	14	15	16	17	18	19
17	18	19	20	21	22	23	21	22	23	24	25	26	27	20	21	22	23	24	25	26
24	25	26	27	28	29	30	28	29						27	28	29	30	31		
31																				

April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2	1	2	3	4	5	6	7				1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30		

July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2		1	2	3	4	5	6					1	2	3
3	4	5	6	7	8	9	7	8	9	10	11	12	13	4	5	6	7	8	9	10
10	11	12	13	14	15	16	14	15	16	17	18	19	20	11	12	13	14	15	16	17
17	18	19	20	21	22	23	21	22	23	24	25	26	27	18	19	20	21	22	23	24
24	25	26	27	28	29	30	28	29	30	31				25	26	27	28	29	30	
31																				

[illegible]

Michigan Certified Laboratories for Cryptosporidium Analysis
Michigan Department of Environmental Quality
Remediation and Redevelopment Division
Laboratory Services Section
Laboratory Certification Officer: Gregg A Lundy
Chief of Laboratory Services: George L. Krisztian
Date of Report: July 15, 2014

Phone: (517) 335-9800 Fax: (517) 335-9600
Phone: (517) 335-9219
Phone: (517) 335-8812

Michigan DEQ Certified In State Laboratories

Laboratory Name / Address /Contact Information

Michigan Laboratory ID #

Michigan State University
 Environmental and Molecular Microbiology Laboratory
 480 Wilson Road, 3 Natural Resources Building
 East Lansing, MI 48824

9982

Contact: Rebecca Ives
 Phone: (517) 432-8185
 Fax: (517) 432-1699
 Email: ivesrebe@msu.edu

Michigan DEQ Certified Out of State Laboratories

Laboratory Name / Address /Contact Information

Michigan Laboratory ID #

EMSL Analytical, Inc.
 Cinnaminson, New Jersey Laboratory
 200 Route 130 North
 Cinnaminson, NJ 08077

9970

Contact: Helen MacMinn
 Phone: (856) 303-2584
 Fax: (856) 786-5971
 Email: hmacminn@emsl.com

Eurofins Eaton Analytical, Inc.
 South Bend, Indiana Laboratory
 110 South Hill Street
 South Bend, IN 46617

9926

Contact: Dale Piechocki
 Phone: (574) 472 5523
 Fax: (574) 233-8207
 Email: dalepiechocki@eurofinsus.com

Laboratory Name / Address /Contact Information**Michigan Laboratory ID #**

Scientific Methods Inc.
12441 Beckley Street
Granger, IN 46530

9984

Contact: Matt Hayes
Phone: (574) 277-4078
Fax: (574) 968-0269
Email: matt@scientificmethods.com

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Wednesday, June 24, 2015 12:07 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: LT2 Source Water Sampling Plan - Reviewer's Checklist
Attachments: Schedule 1 - 3 Reviewer Checklist.docx; Monitoring Plan Approval letter Sch 2 plants.docx

FYI, Regarding Flint LT2 plan.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Wednesday, June 24, 2015 10:26 AM
To: London, Bob (DEQ); Prysby, Mike (DEQ); Dehtiar, Luke (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: LT2 Source Water Sampling Plan - Reviewer's Checklist

Hello Bob, Mike and Luke,

Hopefully you have already received, or will be receiving by July 1st deadline, the LT2 Source Water Monitoring Plans for the 2nd round of sampling from the Schedule 2 WTPs in your district (Flint, Wyoming and all the plants getting raw water from the Saginaw-Midland pipeline). The next step is to review them and either approve 'em, or request missing or incomplete information if some is needed. In order to assist you in reviewing the plans, attached is a Reviewers Checklist that EPA staff used for the first round of monitoring back in 2006. The checklist contains the items that you should be looking for when reviewing and approving the plans. I recommend that you complete the checklist when (and if) you approve the plans and place your name and date in the bottom line and attach it to the plan and place it in the appropriate file for safe keeping.

Also attached is a sample letter that you may use to notify the systems that their Source Water Monitoring Plans for the 2nd round of sampling is approved (assuming that you have reviewed and approved them). Please feel free to modify the letter as you see fit.

If you have any questions about these issues, please give me a call.

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

LT2 SCHED 1 - 3 SWM CHECKLIST				RECEIVED						
PWS NAME						PWSID				
FACILITY NAME						FACILITY ID				
SUBMITTAL SUMMARY										
INTENT TO TREAT			☐ N/A ☐ SIGNED/ACCEPTABLE		TREATMENT DATE:					
SAMPLING DATES			☐ COMPLETE/ACCEPTABLE (DATE):							
SCHEMATIC			☐ COMPLETE/ACCEPTABLE (DATE):							
WORKSHEET			☐ COMPLETE/ACCEPTABLE (DATE):							
LAB INFO			☐ COMPLETE/ACCEPTABLE (DATE):							
ADDITIONAL INFO NEEDED			☐ YES ☐ N/A (ADD BELOW IF YES)							
ADDITIONAL INFO REQUESTED			☐ YES ☐ N/A		DATE:		VIA:		☐ Phone ☐ Fax ☐ Email	
SOURCE WATER MONITORING SCHEDULE										
SAMPLING DATES		Total # of Samples		Begin Date		End Date				
MONITORING SCHEDULE COMMENTS		☐ SAMPLES NOT EVENLY SPACED		☐ INSUFFICIENT NUMBER OF SAMPLES						
		☐ REVISED INTENT REQUIRED		☐ REVISED SAMPLE SCHEDULE REQUIRED						
		NOTES:								
☐ YES ☐ NO ☐ N/A		SAMPLE SCHEDULE COMPLETE/ACCEPTABLE?								
SOURCE WATER MONITORING LOCATION										
☐ YES ☐ NO		Schematic acceptable? [Shows location of sampling point in relation to all sources and plant, including all points of chemical addition]								
☐ YES ☐ NO		Worksheet acceptable? [Provides sufficient detail on source usage, chemical addition, etc., to allow reviewer to make a decision regarding the acceptability of the monitoring location]								
SAMPLE TYPE		☐ N/A ☐ BLENDED ☐ COMPOSITE ☐ WEIGHTED								
☐ YES ☐ NO		Sampling point is prior to all chemical addition, pretreatment and filter backwash recycling? If no, check all boxes below that apply.								
		☐ KMNO4/CI ☐ CUSO4 ☐ FILTER BACKWASH RECYCLE ☐ OTHER								
		NOTES:								
☐ YES ☐ NO		SAMPLE LOCATION ACCEPTABLE? ☐ AS IS ☐ WITH CONDITIONS FOR ABOVE								
LABORATORY INFORMATION										
LAB ON LIST?		☐ YES ☐ NO		LAB NAME			LAB ID			
LAB CERTIFICATE SUBMITTED?		☐ YES ☐ N/A		LAB CERT OK?			☐ YES ☐ NO			
NOTES/FOLLOW UP ITEMS										
PWS NOTIFIED? ☐ Y ☐ N		DATE:		VIA: ☐ EMAIL ☐ PHONE ☐ FAX		RESPONSE DUE:				
Reviewer:						Approval Date:				

Date:

To: Schedule 2 Plants

Address:

Dear:

SUBJECT: Approval of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2),
2nd Round of Source Water Monitoring Plan

This letter is to notify you that the Michigan Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance has reviewed and approved your system's LT2 Round 2 Sampling - Source Water Monitoring Plan.

Next Steps

1. Collect *Cryptosporidium*, *E. coli*, and turbidity samples at the location and on the dates noted in your plan every month for 24 months starting in October 2015.
2. Samples must be collected prior to the addition of any chemicals such as disinfectants and oxidants. If your system feeds any chemicals prior to your sampling point, the use of these chemicals must be temporarily discontinued for a period of time prior to the collection of your source water samples.
3. If your plant recycles filter backwash water or other waste streams, the samples must be collected prior to the point where recycled streams enter into the treatment process.
4. Sample results must be reported the appropriate DEQ District Office no later than 10 days after the end of the month following the month in which samples are collected. As an example, samples collected in October 2015 must be reported no later than December 10, 2015.
5. Once all required source water samples are collected, a bin classification will need to be determined for your system. Your bin classification determines whether further treatment for *Cryptosporidium* is required, and must be reported to the DEQ within 6 months after the sampling has been completed, or by March 31, 2018.

If you have any questions about this subject, please contact this office.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Wednesday, June 10, 2015 10:40 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Lead-Copper info
Attachments: Consumer Notice of Lead Results.docx

From Flint regarding lead and copper.....

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Michael Glasgow [<mailto:mglasgow@cityofflint.com>]
Sent: Wednesday, June 10, 2015 10:37 AM
To: Prysby, Mike (DEQ)
Subject: Re: Lead-Copper info

Mike,

To answer your questions:

1. I'm trying to compile the list.
2. There were a couple of Apartment residences that were used in the first sampling pool. These would be tier 2 sites. the majority were Tier 1.
3. A copy of the consumer notice is attached below.
4. This was in response to a customer complaint, and it is a business. I would only use the Utility sink as a site if we are short a sample, and would be a Tier 3. This is not in our sample pool, but is served by lead service line.

On Tue, Jun 9, 2015 at 10:14 AM, Prysby, Mike (DEQ) <PRYSBYM@michigan.gov> wrote:

Mike,

I was trying to contact you regarding Lead and Copper info that we may need. I don't have your cell number....and the WTP main phone was not switching over to the option to have my incoming call forwarded to the lab. I wish to discuss the following:

1. Basically, we need a listing of Flint's PB&CU sampling pool (around 120 sites) with the Tier designation (Tier 1, Tier 2, or Tier 3) and those sites with lead services. It is possible that you may have sent us this information last summer as part of revising the lead & copper monitoring program.
2. The lead & copper reporting form for the July 2014 – Dec 2014 monitoring period states that not all sites were Tier 1; however, the listing of all 100 locations on the subsequent pages show all locations being Tier 1. Please clarify
3. Please provide us a copy of the consumer lead notice that was mailed to each customer in your sampling pool....we only need a copy of one notice.
4. We have received 28 of the 100 samples for the Jan-June 2015 round of lead/copper monitoring. Four of the samples were above the lead action level; however the PURPOSE of monitoring for two of these was noted as "OTHER" instead of ROUTINE MONITORING. The address of these 2 locations are: 625 S. Grand Traverse (Utility Sink) and 625 S. Grand Traverse (Bathroom). Is this site part of the sampling pool or was this location sampled based on a customer complaint and/or concern?

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

--

Mike Glasgow
Utilities Administrator
City of Flint

Consumer Notice of Lead & Copper Results in Drinking Water

Water Supply Name: City of Flint

County: Genesee WSSN: 2310

Sample Location 2205 Flushing Rd. Date Sampled: 11/19/2014

Thank you for participating in the lead and copper monitoring of drinking water. The levels of lead and copper found at your location are in the table below.

Key to Table	Contaminant	AL	MCLG	Your Result
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water which there is no known or expected risk to health. MCLG's allow for a margin of safety. ppb: parts per billion or micrograms per liter.	Lead (ppb)	15	0	Not Detected
	Copper (ppb)	1300	1300	110

Lead can cause serious health problem if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and it can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects on the brain with lower IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

To reduce exposure to lead in drinking water:

- Run your water to flush out lead. Run the water until it becomes cold.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot tap; lead dissolves more easily in hot water.
- Do not boil water to remove lead. Boiling water will not reduce lead levels.
- Look for an alternative sources or treatment of water. If your lead result is above 15 ppb, you may want to consider purchasing bottled water or a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Identify if your plumbing fixtures contain lead. New faucets, fittings, and valves, may contain up to 8 percent lead including those advertised as lead-free" and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

Although the primary sources of lead exposure for most children are deteriorating lead-based paint, lead-contaminated dust, and lead contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure to lead may come from drinking water.

For more information, contact us at: City of Flint Water Plant (810)787-6537.

For more information on reducing lead exposure around your home and the health effects of lead, visit the U.S. EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Tuesday, June 09, 2015 12:39 PM
To: Howes, Sarah (DEQ); Pallone, Maggie (DEQ); Wurfel, Brad (DEQ)
Cc: Prysby, Mike (DEQ); Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Rosenthal, Adam (DEQ); Thelen, Mary Beth (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Flint Drinking Water TTHM Standard Violation - 2nd quarter 2015
Attachments: Flint VN TTHM 6_9_15.pdf

Attached is a copy of the Violation Notice and Public Notice Template being mailed to the City of Flint by the DEQ Office of Drinking Water and Municipal Assistance regarding an exceedance of the Maximum Contaminant Level (MCL) standard for Total Trihalomethanes at certain locations within the City's drinking water distribution system.

This violation notice is in response to updated monitoring completed in May 2015, which shows the locational running annual average for one of the City's eight compliance sampling locations continues to exceed MCL standard of 0.080 mg/L. It is however, important to note that all individual compliance sample results collected in both May and February were below the 0.080 mg/L levels.

You are being provided an electronic copy of this notice as exceedance of this drinking water standard is expected to generate inquiries from water system customers, news media, and the general public.

Sarah Howes or Maggie Pallone will be informing members of the Michigan legislature.

If you have any questions or would like any additional information, you may contact Michael Prysby, District Engineer, DEQ-ODWMA at 517-290-8817, or you may contact me at the number below.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

June 9, 2015

Mr. Brent Wright, Operations Supervisor
City Of Flint – Department of Public Works
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice (VN) – Maximum Contaminant Level for Total
Trihalomethanes (TTHM)
2nd Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the city of Flint (City) is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels for disinfection byproducts (MCLs)*, of the 1979 Administrative Code.

In accordance with R 325.10610, *MCLs*, of the 1979 Administrative Code, the MCL for disinfection byproduct TTHM is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City's highest TTHM LRAA, based on the last four quarters, ending June 30, 2015, is 0.094 mg/L which exceeds the standard, and at this time only one of the eight sample site locations exceed the LRAA standard of 0.080 mg/L.

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on June 1, 2015, and will continue until the TTHM LRAA is below the MCL at all sample sites.

Mr. Brent Wright

2

June 9, 2015

TTHM Results (mg/L)	8/21/14	11/20/14	2/17/15	5/18/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.145	0.059	0.0162	0.0514	0.068	0.044
DBP2 Liquor Palace 3302 South Dort Highway	0.127	0.033	0.0168	0.0635	0.060	0.044
DBP3 North Flint Auto 6204 North Saginaw St.	0.118	0.041	0.0149	0.0452	0.055	0.037
DBP4 University Market 2501 Flushing Road	0.196	0.094	0.0245	0.0598	0.094	0.059
DBP5 Taco Bell 3606 Corunna Road	0.181	0.034	0.0151	0.0547	0.072	0.040
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.144	0.054	0.0192	0.0605	0.069	0.048
DBP7 Salem Housing 3216 MLK Boulevard	0.112	0.050	0.0285	0.0727	0.066	0.056
DBP8 BP Gas Station 822 South Dort Highway	0.112	0.036	0.0199	0.0461	0.054	0.037

We are encouraged by the results from the most recent round of compliance samples collected on May 18, 2015, which again show individual TTHM levels below 0.080 mg/L at all locations throughout the City's system. Operational Evaluation Reports from December 2014, February 2015, and May 2015, have identified possible causes and corrective measures for the previous elevated TTHM levels which we encourage the City to continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported for the most recent quarter in comparison to levels in May 2014, and suggest the City may be able to achieve compliance with the TTHM standard at all sites by continuing these efforts.

Our office is currently reviewing the Operational Evaluation Report dated May 29, 2015, and will provide the City and their consultant with comments, as needed, to help address this MCL violation.

Further, the TTHM operational evaluation level (OEL) calculated in accordance with R 325.10719I, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, is now below the 0.080 mg/L operational evaluation trigger at all eight sample site locations. However, our office is requesting that an operational evaluation again be conducted incorporating the most recent sample results, given the increase in TTHM levels from February 2015 results, and that the next monitoring period of August has been identified as the City's peak month for TTHM levels. **Please provide our office with an updated Operational Evaluation Report by Monday, August 31, 2015.**

If you have any other factual information you would like us to consider regarding the violation identified in this VN, please provide them in a written response by June 23, 2015.

Mr. Brent Wright

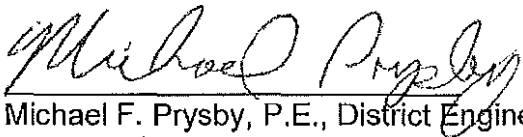
3

March 5, 2015

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery **and** by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN which contains the minimum required language. The City is encouraged to include additional information regarding its response efforts to this violation. **Please notify your consumers by July 1, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the PN.** This violation must also be included in your 2015 Consumer Confidence Report, due by July 1, 2016. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below; at prysbym@michigan.gov; or rosenthala@michigan.gov; or at DEQ, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,



Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-290-8817



Adam Rosenthal, Environmental Quality
Analyst
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-284-6644

Enclosure

cc: Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Mr. Robert Bincsik, City of Flint
Mr. Howard Croft, City of Flint
Mr. Michael Glascow, City of Flint
Genesee County Health Department
Ms. Liane Shekter Smith, DEQ
Mr. Richard Benzie, DEQ
Mr. Stephen Busch, DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (August 21, November 20 of 2014, and February 17 & May 18 of 2015). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the MCL. The standard for TTHMs is 80 micro grams per liter (µg/L). The location reporting the highest TTHM level was 94 µg/L; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent individual sample results were all less than the 80 µg/L standard, however since compliance is calculated using a locational running annual average (LRAA) of the most recent four quarters, we are still out of compliance with the MCL at one of eight locations.

For more information, please contact Mr. Brent Wright at 517-787-6537, or the Flint Water Plant at 4500 North Dort Highway, Flint, Michigan 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed
Reminder to water supplier: This notice/certification must be sent to the Department of Environmental Quality.		

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, June 05, 2015 2:46 PM
To: Wurfel, Brad (DEQ); Howes, Sarah (DEQ); Shekter Smith, Liane (DEQ)
Cc: Pallone, Maggie (DEQ); Benzie, Richard (DEQ); Prysby, Mike (DEQ); Rosenthal, Adam (DEQ)
Subject: Draft Flint TTHM Violation Notice
Attachments: Flint DBP MCL 2Q15.pdf

Attached is a draft violation notice to the City of Flint regarding the exceedance of the drinking water standard for total trihalomethanes (TTHM) based on the latest round of samples collected in May 2015.

As predicted, the levels from the latest round are all again below the 80 part per billion level, but the annual average calculation for 1 of the 8 sites remains above the maximum contaminant level standard. An evaluation report is not required based on these lower levels but is still being requested given August are when levels historically peak. If levels remain low enough in August the City has the potential to start complying with the standard as the high levels from last year get dropped from the calculation. We could also end up with compliance with the standard but individual results above the 80 part per billion level.

We plan to get the letter out on Tuesday June 9 so please provide any comments/concerns/questions by Monday. An electronic copy of the signed letter will be provided to Maggie/Sarah for forwarding to legislative members in the Flint area as was done with the previous violation notices.

Again, if you have any questions, please contact me directly.

Stephen Busch, P.E.
Lansing and Jackson District Supervisor
Office of Drinking Water and Municipal Assistance
MDEQ
517-643-2314



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE



DAN WYANT
DIRECTOR

June 9, 2015

Mr. Brent Wright, Operations Supervisor
City Of Flint – Department of Public Works
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice (VN) – Maximum Contaminant Level for Total
Trihalomethanes (TTHM)
2nd Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the city of Flint (City) is in violation of the Safe Drinking Water Act, 1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels for disinfection byproducts (MCLs)*, of the 1979 Administrative Code.

In accordance with R 325.10610, *MCLs*, of the 1979 Administrative Code, the MCL for disinfection byproduct TTHM is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City's highest TTHM LRAA, based on the last four quarters, ending June 30, 2015, is 0.094 mg/L which exceeds the standard, and at this time only one of the eight sample site locations exceed the LRAA standard of 0.080 mg/L.

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on June 1, 2015, and will continue until the TTHM LRAA is below the MCL at all sample sites.

Mr. Brent Wright

2

June 9, 2015

TTHM Results (mg/L)	8/21/14	11/20/14	2/17/15	5/18/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	0.145	0.059	0.0162	0.0514	0.068	0.044
DBP2 Liquor Palace 3302 South Dort Highway	0.127	0.033	0.0168	0.0635	0.060	0.044
DBP3 North Flint Auto 6204 North Saginaw St.	0.118	0.041	0.0149	0.0452	0.055	0.037
DBP4 University Market 2501 Flushing Road	0.196	0.094	0.0245	0.0598	0.094	0.059
DBP5 Taco Bell 3606 Corunna Road	0.181	0.034	0.0151	0.0547	0.072	0.040
DBP6 Rite-Aid Pharmacy 5018 Clio Road	0.144	0.054	0.0192	0.0605	0.069	0.048
DBP7 Salem Housing 3216 MLK Boulevard	0.112	0.050	0.0285	0.0727	0.066	0.056
DBP8 BP Gas Station 822 South Dort Highway	0.112	0.036	0.0199	0.0461	0.054	0.037

We are encouraged by the results from the most recent round of compliance samples collected on May 18, 2015, which again show individual TTHM levels below 0.080 mg/L at all locations throughout the City's system. Operational Evaluation Reports from December 2014, February 2015, and May 2015, have identified possible causes and corrective measures for the previous elevated TTHM levels which we encourage the City to continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported for the most recent quarter in comparison to levels in May 2014, and suggest the City may be able to achieve compliance with the TTHM standard at all sites by continuing these efforts.

Our office is currently reviewing the Operational Evaluation Report dated May 29, 2015, and will provide the City and their consultant with comments, as needed, to help address this MCL violation.

Further, the TTHM operational evaluation level (OEL) calculated in accordance with R 325.10719I, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, is now below the 0.080 mg/L operational evaluation trigger at all eight sample site locations. However, our office is requesting that an operational evaluation again be conducted incorporating the most recent sample results, given the increase in TTHM levels from February 2015 results, and that the next monitoring period of August has been identified as the City's peak month for TTHM levels. **Please provide our office with an updated Operational Evaluation Report by Monday, August 31, 2015.**

If you have any other factual information you would like us to consider regarding the violation identified in this VN, please provide them in a written response by June 23, 2015.

Mr. Brent Wright

3

March 5, 2015

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery and by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN which contains the minimum required language. The City is encouraged to include additional information regarding its response efforts to this violation. **Please notify your consumers by July 1, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the PN.** This violation must also be included in your 2015 Consumer Confidence Report, due by July 1, 2016. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least \$1,000 per event, with a maximum of \$5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below; at prysbym@michigan.gov; or rosenthala@michigan.gov; or at DEQ, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-290-8817

Adam Rosenthal, Environmental Quality
Analyst
Lansing District Office
Office of Drinking Water and
Municipal Assistance
517-284-6644

Enclosure

cc: Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Mr. Robert Bincsik, City of Flint
Mr. Howard Croft, City of Flint
Mr. Michael Glasgow, City of Flint
Genesee County Health Department
Ms. Liane Shekter Smith, DEQ
Mr. Richard Benzie, DEQ
Mr. Stephen Busch, DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (August 21, November 20 of 2014, and February 17 & May 18 of 2015). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the MCL. The standard for TTHMs is 80 micro grams per liter ($\mu\text{g/L}$). The location reporting the highest TTHM level was 94 $\mu\text{g/L}$; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

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People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent individual sample results were all less than the 80 $\mu\text{g/L}$ standard, however since compliance is calculated using a locational running annual average (LRAA) of the most recent four quarters, we are still out of compliance with the MCL at one of eight locations.

For more information, please contact Mr. Brent Wright at 517-787-6537, or the Flint Water Plant at 4500 North Dort Highway, Flint, Michigan 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION:

WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

_____ Signature	_____ Title	_____ Date Distributed
Reminder to water supplier: This notice/certification must be sent to the Department of Environmental Quality.		

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, June 05, 2015 10:12 AM
To: Antil, Jeffrey (DEQ); Brennan, Patrick (DEQ); Drake, Jerry (DEQ); DuMont, Ralph (DEQ); Joseph, Mark (DEQ); Prysby, Mike (DEQ); Rennaker, Joanne (DEQ); Rosenthal, Adam (DEQ); Skinker, Bethel (DEQ); Swendsen, Kurt (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: Goings On

My schedule has been chaotic the last couple weeks, but I wanted to give you a little update as to what has been going on and what is upcoming in case you've missed me. I am in Lansing today to work on some Flint stuff and try to get a little organized for the weeks ahead.

- EPA has released its own non-enforcable health advisory levels for the algal toxin microcystin, and draft implementation guidance is expected to be finalized by mid-June. The HAL's differ from what was established by WHO and this will impact communities in Monroe County. Jerry, Jeff, and I will be working with them to make sure everyone is on the same page about monitoring and public notification should an event occur. As of now weekly updates from NASA and Michigan Tech indicate that nutrient loading is down significantly compared to previous peak years in that area of Lake Erie.
- Flint continues to get results below the 80 ppb level for TTHM's but will remain in violation, unless August results come back low. An inquiry from Rep. Neely was addressed last week and the City is permitting replacement of filter media with Granular Activated Carbon.
- I have been trying to scratch out time to keep working with Kurt on training, but appreciate Lansing District staff transferring their historical knowledge of the systems in his district. Kurt and Jeff will be attending a multistate EPA sanitary survey training course here in June.
- The 2012 Michigan Plumbing Code is being updated based on the 2015 International Plumbing Code and the committee I have been working with on this just finished (substantially completed) the draft this week freeing a couple of dates that had been on hold.
- Work on the EPA lead-free law implementation federal workgroup has slowed since a public meeting was held last month, and my role should be closing out soon.
- I had the opportunity to attend a Leadership Forum in mid-May where Governor Snyder gave the keynote speech in the morning and I attended sessions on infrastructure funding attended by MDOT, ASCE, and Mayors of E. Lansing and suburban Detroit. The other session was on Data Management with representative from DTMB, consultants, and a Detroit data project. I ended up sitting down with member of the Public Service Commission to discuss some AWWA proposals and a SEMCOG consultant to discuss the DWSD/Great Lakes Water Authority.
- The ODWMA is being audited by the Michigan Office of Auditor General and with the Lansing District providing the easiest access to the community water supply program we are being asked to "show off" our work. OAG staff will be imbedded with ODWMA on the fourth floor for a few months so this isn't just a simple/quick process. We had a brief meeting this week, but may need to spend some time to help educate them on what we do and just how we do it.

- The AWWA Groundwater Source Water conference was earlier this week and attended by several of you. I gave a presentation on microcystin and the harmful algal bloom situation in Lake Erie yesterday that appeared to be well received. The content of the conference was overall very good. (Director Wyant was the keynote and gave a specific shout out to our district and indicated that ODWMA is the best at customer service/compliance assistance).
- Yesterday I attended a meeting to discuss implementation of an Electronic Data Management system within ODWMA. The Office is at the top of the lineup within the Department for implementation and district community water supply implementation will begin in the Lansing and Jackson districts over the next 2 years. This will be a huge shift in how we all conduct our work and there will be a lot of growing pains as we move through the process and get our legs under us again. (More on this will be discussed in Jackson on Monday)
- Monday is the Director's first district roundtable visit where we are bringing in local stakeholders to discuss their issues, and Director Wyant will also spend some significant time with district staff. Liane is going to attend and will spend time with staff as well. The Lansing roundtable is in mid-October.
- I continue to work with others in ODWMA to help define how the office will proceed with addressing secondary treatment systems at water customers, and have future meetings with the hospital association and DLARA programs for plumbing, building, and health care facilities.
- Following discussions from a Lansing ODWMA staff meeting last month we will have a planning meeting next week regarding a statewide drinking water lime reuse/disposal workshop for lime softening WTP's. This will include OWMRP, OEA, and MDARD staff.
- Next week also includes a plumbing board meeting, district supervisor meetings for both Lansing and Jackson districts, some enforcement meetings

I may have left something out but as you can see I have been a busy bee. I look forward to spending more time returning my focus to the work going on in our district offices, thankful that you all keep plugging along with what you need to do! Have a great weekend.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, June 05, 2015 7:16 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: more customer lead samples over the AL?

Adam,

Do a quick check as to where Flint is at on their PB/Cu monitoring (Jan 1 – June 30th round) and whether we have all (or most) of the sample results in to determine where their AL is at..... If this issue heats up again...it would be helpful to know that the city continues to meet the PB/CU ALs.

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, June 05, 2015 7:09 AM
To: Crooks, Jennifer; Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Poy, Thomas
Subject: Re: more customer lead samples over the AL?

Slight correction...most old pipe from the home *to the shut-off* is galvanized, and the majority of lead they have seen is from the shut-off to the main. Apologies for not getting this report written up, but I keep getting sidetracked with NDWAC LCR and RTCR primacy packages. I will try to get that written up and out to you in the next week.

If I get copies of the latest results I will forward them, but my understanding is that the DEQ lab runs the samples, so they should be available within DEQ as well.

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, June 4, 2015 03:05 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); cookp@michigan.gov
Cc: Deltoral, Miguel; Poy, Thomas
Subject: more customer lead samples over the AL?

I talked with Miguel this week; he learned that there have been 2 more customer-requested lead samples that have come back over the AL: 22ppb and 40 ppb. These were customer-requested samples taken by Mike Glasgow and analyzed at the Flint lab. When I receive the lab reports, I'll email them to you—or Mike Glasgow should have copies of all the customer-requested lead sample results he's taken. Greg Waldorf, the contractor that replaced Ms. Walters' service line on Wed May 6, said that many of the customer services are galvanized from the customer to the water main, but they also have a lead line that connects the shut-off valve with the water main—which would make the lead piping City-owned.

Jennifer

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, May 08, 2015 2:19 PM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: Re: Ticket #23002-490657 Response Sent

I got this from chuck Bennett late yesterday. We will email the ccr for the period in question and offer contact for further assistance as needed

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

Sent from my iPhone

On May 8, 2015, at 2:15 PM, Benzie, Richard (DEQ) <BENZIER@michigan.gov> wrote:

I don't know if you have had any contact with this person and I am unsure that a response is necessary, as it was forwarded as an FYI.

It is difficult to determine what is being requested, but it looks like a customer of Flint asked EPA for drinking water quality and when EPA told her to contact her water system, she tried to get the information from the state but contacted WRD. It also sounds like she questions relying upon the local supplier to report monitoring results.

You could contact her to see if we can be of assistance or send her a message indicating that we (you) are the source of drinking water information if she doesn't want to get it from the city.

From: Devereaux, Tracy Jo (DEQ)
Sent: Friday, May 08, 2015 8:22 AM
To: Philip, Kris (DEQ); Benzie, Richard (DEQ)
Cc: Shekter Smith, Liane (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

fyi

Thanks,
Tracy Jo

From: Smith, Laura (DEQ)
Sent: Thursday, May 07, 2015 5:39 PM
To: Devereaux, Tracy Jo (DEQ)
Cc: Hill, Charles (DEQ); Selden, Barry (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

Please forward to the appropriate staff in the Office of Drinking Water and Municipal Assistance.

Thanks,

Laura

From: Sheila Bailey-Waddell [<mailto:sheila.bw@hotmail.com>]
Sent: Thursday, May 07, 2015 5:17 PM
To: Hill, Charles (DEQ); Selden, Barry (DEQ); Smith, Laura (DEQ)
Subject: FW: Ticket #23002-490657 Response Sent

From: sheila.bw@hotmail.com
To: safewater_support@supportportal.com; bartholi@msu.edu; info@cityofflint.com;
senator@stabenow.senate.gov; bennettc4@michigan.gov
Subject: RE: Ticket #23002-490657 Response Sent
Date: Thu, 7 May 2015 16:41:38 -0400

Hello,

It is unfortunate that you don't track local drinking water information. So in essence your tracking efforts are limited to the auspices of NRCS Water Division only for the conservation of farming and other natural (non-human) resources. What if, by chance, the local water source is not being accurate in their reporting of safe drinking water and source supply?

Thank you,
 Sheila

<http://mi.water.usgs.gov/pubs/MISC/RTSMI-0121/pdf/WTO222b.pdf>

From: safewater_support@supportportal.com
To: sheila.bw@hotmail.com
Date: Thu, 20 Feb 2014 08:25:04 -0500
Subject: Ticket #23002-490657 Response Sent

The Safe Drinking Water Hotline has responded to your question(s).

Hello,

Thank you for contacting the Safe Drinking Water Hotline. You had some concerns regarding your local water quality. Please review the information included below:

The Safe Drinking Water Hotline does not track local drinking water information. The best source of specific information about your drinking water is your water supplier. Water suppliers that serve the same people year-round are required to send their customers an annual water quality report called a Consumer Confidence Report (CCR). The CCR describes any contaminants that have been detected in your drinking water, how these detection levels compare to health-based national drinking water standards, and the source of your drinking water. To obtain a copy of your CCR, you may search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>. If your water system's report is not online, you should contact your local water provider to obtain

a copy of this report. To find the telephone number for your local water provider, please check your water utility bill, your local phone book, or search online at <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

If your city has a population in excess of 100,000, they are obligated to publish the reports online. Many local governments have sites where reports can be posted, even if a system itself does not have a site. EPA will make links from its Web site

(<http://water.epa.gov/drink/index.cfm>) to all the reports of which it is aware (Preparing Your Drinking Water Consumer Confidence Report: Revised Guidance for Community Water Suppliers), EPA816-R-05-002).

If your city has not made the 2012 report available, please contact your state water program. They are the regulatory and enforcement agency for all public water systems in your state. The state water program should help you find the data. You can find contact information to your state by following the link below:

<http://water.epa.gov/drink/local/index.cfm>. <http://cfpub.epa.gov/safewater/ccr/index.cfm>.

EPA's Safe Drinking Water Hotline answers questions about the regulations and programs developed in response to the Safe Drinking Water Act. The Safe Drinking Water Hotline provides information, including access to publications, on EPA's drinking water standards, source water protection, and underground injection wells. The Hotline also provides referrals to state public water supply supervision programs, state underground injection control programs, and state laboratory certification programs.

If you have additional questions, you may contact the Safe Drinking Water Hotline at the following number:

(800) 426-4791 -- Toll Free

For more information, please visit EPA's Office of Ground Water and Drinking Water Internet web site:

<http://water.epa.gov/drink/index.cfm>.

Thank you for your interest in safe drinking water.

Ticket Information:

Ticket #: 23002-490657

Date Created: 2/19/2014 02:18 PM EST

Subject: Water Quality Assessment

Question: I live in Flint Michigan. What I have learned is Michigan appears to have 2012 and 2014 reports but neither are being reported by EPA. On this side of reporting for this data, we have no information as to the status of the 2012 or 2014 data. There are automotive plants in my area and the water quality is suspected to be less than satisfactory for residents.

To update or check the status of this Ticket:

1. Go to: <http://safewater.supportportal.com/link/portal/23002/23015/Ticket/490657>
2. Log in, and you will be automatically taken to the Ticket page.

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, May 08, 2015 8:23 AM
To: Rosenthal, Adam (DEQ)
Subject: FW: Flint

Adam,

Just a heads-up.....EPA Region V is really delving into the Flint lead issue.....only thing is.....there isn't an issue....yet

Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, May 07, 2015 4:54 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Deltoral, Miguel; Poy, Thomas; Porter, Andrea
Subject: Flint

Steve and Mike—I mentioned this briefly to Liane last week at our State Directors' meeting when Liane was here in Chicago, and I want to keep you all in the loop as to what we're doing here: After Miguel and I went to Bay City to give presentations at the Local Health Dept workshop on Monday afternoon last week, we stopped at Ms. LeeAnne Walters' home in Flint Monday to take her sample bottles for a sampling study. We stayed several hours to check out the plastic plumbing in her home, the piping out of her house, what mains the other homes in the neighborhood were likely to be getting their water from, etc, and Miguel took many pictures. Miguel is working with Mark Edwards at Virginia Tech, a well-known national expert in the area of lead, and Mike Schock at EPA's Office of Research and Development in Cincinnati.

Miguel drove back to Flint yesterday to be present when the City replaced Ms. Walters' water service line. Miguel took a piece of the service line pipe for analysis and to study the scale on the inside of the pipe.

Miguel is putting together a summary of his findings, which he will complete next week. He will send his summary to you all for your review. I will be out of the office tomorrow, but back in the office next Monday – Thursday, in case you have questions; or you can contact Tom Poy tomorrow.

Jennifer

Jennifer Kurtz Crooks
 Michigan Program Manager
 Ground Water and Drinking Water Branch
 U.S. EPA Region 5

77 West Jackson Blvd.
Chicago, Illinois 60604
312.886.0244
crooks.jennifer@epa.gov
312.582.5853 (fax)

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 1:21 PM
To: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Don't you have a plant tap metals result?

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Rosenthal, Adam (DEQ)
Sent: Friday, April 24, 2015 1:03 PM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

I can't find one. Since they weren't over on the 1st 6 month round after going on river water, we didn't require the monitoring.

Adam Rosenthal, EQA
 MDEQ – Office of Drinking Water and Municipal Assistance
 Lansing District – Constitution Hall 1SW
 PO Box 30242
 Lansing, MI 48909
 517-284-6644
 fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Cook, Pat (DEQ)
Sent: Friday, April 24, 2015 12:03 PM
To: Rosenthal, Adam (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: FW: Flint Corrosion Control?

Adam – can you please tell me Flints source water lead level? (I'm guessing 0, but need to confirm.)

pat

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral
 Regulations Manager
 U.S. EPA R5 GWDWB
 77 West Jackson Blvd, (WG-15J)
 Chicago, IL 60604
 Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

From: Deltoral, Miguel [<mailto:deltoral.miguel@epa.gov>]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral
Regulations Manager
Ground Water and Drinking Water Branch
77 West Jackson Blvd (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 11:56 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: Re: Flint Corrosion Control?

Pat,

You are correct, I received a call from Miguel regarding his concerns with the lead/copper sampling procedure from lead services and how he believes it is skewing down the lead level results from sites with lead services. I briefed Steve on the call and we can discuss in more detail next Tues.

Sent from my iPhone

On Apr 24, 2015, at 11:16 AM, Cook, Pat (DEQ) <COOKP@michigan.gov> wrote:

I agree. I'll forward this info to Miguel. However, don't be surprised if you get a call from him disagreeing with our position.

Thank you all for the quick replies.

pat

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 10:54 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring.

"The only provision of the Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead PQL for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. However States may consider the presence of copper in tap samples when determining whether the existing treatment is optimized."

I believe this condition has been met.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

As we discussed, Flint is not practicing corrosion control treatment at the WTP. They are conducting lead & copper monitoring at 100 locations. WQ monitoring is also being conducted. The first round of samples after switch-over (July 1, 2014 – Dec 31, 2014) had 90th percentile results as follows: Lead: 6 ppb, Copper 110 ppb

The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approx. 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Friday, April 24, 2015 10:54 AM
To: Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

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I believe this condition has been met.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

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Michael Prysby, P.E.
 District Engineer
 Office of Drinking Water and Municipal Assistance
 517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 24, 2015 10:32 AM
To: Cook, Pat (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: Flint Corrosion Control?

Pat,

As we discussed, Flint is not practicing corrosion control treatment at the WTP. They are conducting lead & copper monitoring at 100 locations. WQ monitoring is also being conducted. The first round of samples after switch-over (July 1, 2014 – Dec 31, 2014) had 90th percentile results as follows: Lead: 6 ppb, Copper 110 ppb

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Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Cook, Pat (DEQ)
Sent: Thursday, April 23, 2015 12:48 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control?

Hi Mike – I have a quick question for you: what is Flint doing now (post Detroit) for corrosion control treatment?

Pat

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Monday, April 06, 2015 9:00 AM
To: Michael Glasgow
Cc: Rosenthal, Adam (DEQ)
Subject: RE: City of Flint - March Bromate Results

Michael,

The March result is encouraging....we need a copy of the sample result from the sample collected in October of 2014...

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

From: Michael Glasgow [mailto:mglasgow@cityofflint.com]
Sent: Monday, April 06, 2015 7:24 AM
To: Rosenthal, Adam (DEQ)
Cc: Prysby, Mike (DEQ)
Subject: City of Flint - March Bromate Results

Adam,

Here are the results of our March bromate sampling.

Mike Glasgow
City of Flint Water Plant

Rennaker, Joanne (DEQ)

From: Busch, Stephen (DEQ)
Sent: Thursday, April 02, 2015 2:06 PM
To: Rosenthal, Adam (DEQ)
Subject: FW: LT2 letter for Flint
Attachments: Cover letter 2nd round Sch 2 plants.docx; Schedule 2 LT2 Sampling Plan Template.docx; Round 2 Sched 2 Calendar.xlsx; Crypto Certified labs April 2015.pdf

FYI.

Stephen Busch, P.E.
 Lansing and Jackson District Supervisor
 Office of Drinking Water and Municipal Assistance
 MDEQ
 517-643-2314

From: Cook, Pat (DEQ)
Sent: Thursday, April 02, 2015 2:04 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ)
Subject: LT2 letter for Flint

Hi Mike,

Attached is the information that you will have to mail to the Flint WTP ASAP pertaining to the 2nd round of source water monitoring as required by the LT2 Rule. The first attachment is a letter that you will have to place on Lansing District letterhead with an appropriate signature block. The next 3 attachments are documents that you will need to print out and include with the letter.

You should also consider emailing the sampling plan template, calendar and example schematics to them so they can complete those forms electronically if they choose to do so. I'll email you the example schematics in a separate email.

If you have any questions, please give me a call.

Patrick Cook, P.E.
 Community Drinking Water Unit
 Office of Drinking Water & Municipal Assistance
 Michigan Department of Environmental Quality
 Phone: (517) 284-6514
cookp@michigan.gov

Date:

To: Schedule 2 Plants

Address:

Dear :

SUBJECT: Long Term 2 Enhanced Surface Water Treatment Rule
2nd Round of Source Water Monitoring Requirements

The Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) was promulgated by the U.S. Environmental Protection Agency on January 5, 2006. The Michigan Department of Environmental Quality adopted this rule into the Michigan Administrative Rules in December, 2009. All public water systems that are supplied by a surface water source and systems supplied by a ground water source under the direct influence of surface water (GWUDI) are subject to this rule.

According to the LT2 Rule, systems are required to conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. Please keep in mind that Grandfathering data will not be accepted for the second round of monitoring. This monitoring includes at least one source water *Cryptosporidium*, *E. coli*, and turbidity sample per month for a period of 24 months for systems serving populations greater than 10,000 people. Systems will be assigned to a "treatment bin" based on the results of source water monitoring. The treatment bin specifies the level of *Cryptosporidium* removal and/or inactivation that the system must achieve.

Our records indicate that your system is required to comply with the source water monitoring requirements on **Schedule 2** as stated below in Table 1. Therefore, your system is required to submit to the DEQ a source water monitoring plan for each plant by July 1, 2015, and start the 2nd round of monitoring in October, 2015.

Table 1 – LT2 Milestone Dates for 2nd Round of Source Water Sampling

System Population	Schedule	Must submit Source Water Sampling Plan by...	Must begin second round of source water monitoring...
At least 100,000	1	January 1, 2015	April 1, 2015
50,000 – 99,999	2	July 1, 2015	October 1, 2015
10,000 – 49,999	3	July 1, 2016	October 1, 2016
<10,000	4	July 1, 2017	October 1, 2017

Enclosed with this letter is a Source Water Sampling Plan template that you can complete and submit to this office to comply with the July 1, 2015 deadline. The template includes instructions and a worksheet that will assist the DEQ in determining if your plan meets the requirements of the LT2 Rule.

If you have any questions about this subject, please contact this office.



**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE**

**LONG TERM 2 (LT2) SOURCE WATER SAMPLING PLAN TEMPLATE
Round 2 Sampling – Schedule 2 Systems**

A responsible official for the water system should submit the following information for DEQ review and approval.

A sampling plan packet consisting of:

1. The name of the Michigan Accredited Lab that will be performing the *Cryptosporidium* analysis. A list of approved labs can be obtained at <http://www.michigan.gov/deqlaboratoryservices>, click on Certifications, click on Drinking Water Analysis Laboratory, click on Cryptosporidium Laboratories.
2. The name of the Michigan Accredited Lab that will be performing the *E.coli* analysis. The laboratory that you select must be certified for *E.coli* enumeration (counting) using an U.S. EPA Approved Analytical Method.
3. Use the enclosed calendars for 2015 - 2017 to select or highlight the days between October 1, 2015, and September 30, 2017, on which you will be collecting your samples. You may also submit a one-page summary of the dates when samples will be collected in mm/dd/yy format. Samples must be collected within a five day window (the date you select, plus or minus 2 days).
4. A schematic indicating all raw water sources, chemical feed points and recycle locations along with an arrow indicating the exact sample location.
5. Completed Source Water Sampling Location Worksheet (provided on the following pages with instructions). Completed worksheets must be submitted to your DEQ Drinking Water District Engineer at least 3 months prior to the start of your system's required sampling period (7-1-15).
6. Signature of the responsible official for the water system acknowledging that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

LT2 SOURCE WATER SAMPLING LOCATION WORKSHEET INSTRUCTIONS:

If your treatment plant uses surface or GWUDI (groundwater under direct influence of surface water) sources, the LT2 rule requires that you monitor each source for *Cryptosporidium*, *E.coli* and turbidity once a month over a 2 year period. Please complete one column of this worksheet for each source.

<u>Source Name</u> - List all sources that will be monitored for <i>Cryptosporidium</i>, <i>E.coli</i> and turbidity. Blending of two or more sources is permitted as long as it is prior to any chemical addition and the blended portions are representative of normal operations. Next to each source, indicate if it is "Blended" or "Not Blended". <i>Please list information for each source in a separate column.</i>
<u>Source Type</u> - For each source, state if it's a Flowing Stream, Lake/Reservoir or GWUDI.
<u>Source Identification Number</u> - Be sure to list a source identification number for each source. Contact your local DEQ District office if you are uncertain of the source identification number for your source(s).
<u>Source Water Sampling Location</u> - Please describe, in detail, the specific location where you will be collecting your samples. If your system has more than one source, you should collect your samples after the raw water from all sources is combined. Your sampling point(s) should be representative of water entering the treatment plant. If you have a raw water off-stream reservoir or storage, samples should be collected after the raw water storage/reservoir. If the raw water is not combined prior to treatment, you may need to composite samples from each source (recommended), or analyze separate samples from each source and calculate a weighted average. <u>Include a plant schematic with an arrow indicating your proposed LT2 sampling location.</u> Example plant schematics are available upon request.
<u>Usage</u> - Please describe, in detail, the specific usage practices for each source - "All year" or "Part-Year/Seasonal"- for your source in recent years and describe the anticipated use in future years. For Part-Year/Seasonal sources, include the months of operation.
<u>Proportion of Flow</u> - Provide the most accurate information available regarding the % of average yearly flow that each source contributes. After providing information for all sources, please clearly indicate which source is your primary. Your primary source is the source that clearly provides the majority of water on a yearly basis to the treatment plant.
<u>Presedimentation, Bank Filtration, or Off-Stream Storage (if applicable)</u> - If you utilize any of these practices, please include them in your plant schematic and indicate if your samples will be collected before or after these practices.
<u>Recycling Practices (if applicable)</u> - If your plant recycles filter backwash water or other waste streams, you must indicate the point where the recycled backwash re-enters the treatment process. Your sampling point should be prior to the location where recycled streams come back into the treatment process. If you do not recycle, please state "Do not recycle" on your plant schematic. Samples collected after recycling will be invalidated; re-sampling will be required.
<u>Chemical Pretreatment</u> - On the plant schematic, indicate chemical feed locations from the intake to the plant. Your sampling point must be prior to any chemical treatment. If you feed any chemical(s) prior to your sampling point, you need to include this information in your sampling worksheet. Samples containing treatment chemicals will be invalidated; re-sampling will be required.
<u>Sample Compositing Procedure</u> - If a blended sample location prior to chemical addition is available, you should collect one blended sample from this location. If such a sample location is not available, plants may choose to sample each blended source separately. In this case, a composite sample representing % contribution of each source is needed. Describe Compositing in detail. A system may request to evaluate blended sources separately in order to provide additional information on <i>Cryptosporidium</i> loading for each source.

Note: Collection of at least one matrix spike sample for every 20 *Cryptosporidium* samples is required and should be documented in the sampling plan schedule (i.e. at least two matrix spike samples are needed for 24 *Cryptosporidium* samples).

Long Term 2 Enhanced Surface Water Treatment Rule Source Water Sampling Location Worksheet

Public Water System (PWS) Name: _____ WSSN: _____

Water Treatment Plant Name: _____

Water Treatment Plant ID: _____

Name and Phone Number of Person completing this Form: _____

Source Name		
Source Type Flowing Stream Lake/Reservoir GWUDI - Ground Water Under the Influence of Surface Water		
Source Identification Number		
Source Water Sampling Location (Raw water tap or sampled at source, indicate location on schematic)		
Usage Operational – almost all the time Demand – a few times a year Emergency – fewer than once per year		
Proportion of Typical Average Daily Flow (if only 1 source, 100%)	_____ %	_____ %
Pretreatment Practices (if applicable) None Presedimentation Bank filtration Other – write in		
Recycling Practices (yes or no) (If yes, describe and indicate location on schematic)		
Chemical Pretreatment (yes or no) (If yes, describe and indicate location on schematic)		
Compositing Procedure (yes or no) (If yes, state if using blended sample tap, composite sample, or weighted)		

Use additional sheets to provide more information.

I acknowledge that water system staff will notify the DEQ immediately upon discovery of any issues related to timely source water sample collection or accurate lab analysis of samples.

Signature

Date

LT2 SOURCE WATER MONITORING SAMPLING CALENDAR

PWS NAME:

PWSID:

2017

January

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

February

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

March

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

April

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

May

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

July

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

August

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Michigan Certified Laboratories for Cryptosporidium Analysis
Michigan Department of Environmental Quality
Remediation and Redevelopment Division
Laboratory Services Section
Laboratory Certification Officer: Gregg A Lundy
Chief of Laboratory Services: George L. Krisztian
Date of Report: July 15, 2014

Phone: (517) 335-9800 Fax: (517) 335-9600
Phone: (517) 335-9219
Phone: (517) 335-8812

Michigan DEQ Certified In State Laboratories

Laboratory Name / Address /Contact Information

Michigan Laboratory ID #

Michigan State University
 Environmental and Molecular Microbiology Laboratory
 480 Wilson Road, 3 Natural Resources Building
 East Lansing, MI 48824

9982

Contact: Rebecca Ives
 Phone: (517) 432-8185
 Fax: (517) 432-1699
 Email: ivesrebe@msu.edu

Michigan DEQ Certified Out of State Laboratories

Laboratory Name / Address /Contact Information

Michigan Laboratory ID #

EMSL Analytical, Inc.
 Cinnaminson, New Jersey Laboratory
 200 Route 130 North
 Cinnaminson, NJ 08077

9970

Contact: Helen MacMinn
 Phone: (856) 303-2584
 Fax: (856) 786-5971
 Email: hmacminn@emsl.com

Eurofins Eaton Analytical, Inc.
 South Bend, Indiana Laboratory
 110 South Hill Street
 South Bend, IN 46617

9926

Contact: Dale Piechocki
 Phone: (574) 472 5523
 Fax: (574) 233-8207
 Email: dalepiechocki@eurofinsus.com

Laboratory Name / Address /Contact Information**Michigan Laboratory ID #**

Scientific Methods Inc.
12441 Beckley Street
Granger, IN 46530

9984

Contact: Matt Hayes
Phone: (574) 277-4078
Fax: (574) 968-0269
Email: matt@scientificmethods.com