UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGIONAL ADMINISTRATOR
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

NOV 16 2016

The Honorable Karen Williams Weaver
Mayor of Flint
1101 South Saginaw Street
Flint, Michigan 48502

Dear Mayor Weaver:

I am writing in follow up to the email from Sylvester Jones of your staff on October 25, 2016, regarding concerns about chemicals being added to the Flint water for the purpose of disinfection and corrosion control. The email raised concerns about the long term impact of the added chemicals on Flint residents. We share your concern for threats to public health – from any source. EPA believes it is important to continue the significant improvement in lead reduction and pathogen control that we have seen in Flint over the last year. The addition of orthophosphate has been essential to restore the protective coating on the pipes and the addition of chlorine has been essential to control pathogens in the water. We understand, however, that chemical interactions in a public water system are complex and we welcome the opportunity to discuss these matters with you.

First, we invite you and your staff to visit our drinking water laboratories in Cincinnati, where you will have the opportunity to meet with the EPA experts who have worked closely with your staff and the state to sample your public water system and ensure that the system recovers from the effects of the switch in source water. In Cincinnati, EPA scientists conduct research to enhance understanding and development of solutions to drinking water treatment and distribution system challenges across the United States. Most importantly, this will give us an opportunity to discuss any questions you have about recommended techniques to safeguard public health, including the addition of corrosion control (orthophosphate) and disinfection (chlorine). We look forward to coordinating that visit with you.

We also are planning our third water quality data summit for January 2017. These meetings have brought together representatives from your administration and scientists from EPA, MDEQ, VA Tech and other universities. These scientists have taken more water samples in Flint than any city in the country. The idea behind these meetings has been to "follow the science." The discussions have been helpful to assess the progress of Flint's water system recovery, as well as consider additional steps to continue that progress. We invite you and your staff to continue your participation in what has proven to be an effective means to monitor current water quality in a unified and consistent manner.

What the science revealed at these summits is that the return of orthophosphate to the water system at or at times slightly below permitted levels has resulted in significantly lower lead levels. When Flint switched water sources to Flint River, it discontinued the use of orthophosphate for corrosion control. Before that time, Flint's water had contained orthophosphate for decades. The discontinuance of orthophosphate, along with several other operational failures, damaged the protective coating in pipes throughout Flint's system and allowed lead to leach into drinking water. Flint has re-initiated the addition of orthophosphate following the return to GLWA source water and the system has made excellent progress. All of the sampling to date has consistently demonstrated improvement, and EPA's most recent data confirms that the orthophosphate addition has helped the system improve significantly. In fact, comparing September 2016 to January 2016, there has been an increase of over 400% in the number of samples with lead values less than or equal to 1 ppb (the lowest detectable level) -- and an 86% decrease in the number of samples with lead values greater than the EPA action level. We note that phosphate has been used for decades in Flint (and around the world) for corrosion control in well-run systems, and is commonly found in higher levels in what residents eat and drink in everyday food and beverages. There is substantial research on the safety and effectiveness of these chemicals for corrosion control.

Similarly, maintaining a positive and measurable chlorine level at all locations within the drinking water distribution system is among the best means of protecting public health from pathogens, such as *legionella*. Current water usage patterns -- and the large size of Flint's distribution system in relation to its current service population -- present challenges to maintaining adequate chlorine. EPA and the State have recommended that the City strive to maintain 0.2 mg/L chlorine residual throughout the distribution system. This level was successful over the past summer, when higher levels of water-borne pathogens would be expected. It is also a well-documented best practice for all drinking water system. In fact, it is the chlorine level recommended for distribution systems in a widely-used document known as *Recommended Standards for Water Works - 2012 Edition.* This document (also known as the *10 State Standards)*, is a set of water treatment standards developed by a group of experts, i.e., *the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers*. It is important to note that chlorine levels have been well within the range we commonly see in other systems, and harmful chemical byproducts resulting from adding chlorine have not been elevated in any of our testing to date.

In addition to these upcoming opportunities, EPA participates in regular weekly meetings with community partners to answer questions about water quality in Flint. We welcome the Concerned Pastors for Social Action to join these meetings and to encourage their parishioners to join as well. These weekly meetings are in addition to the three EPA Open Houses held throughout Flint, where residents interacted one-on-one with experts from nearly 20 federal, state, and local agencies concerned with protection of public health. We are also sharing this information with CORE residents employed by the State so that they can in turn share this with residents as they visit their homes.

Together, we have made great strides in improving water quality in Flint and we share your goal of keeping residents informed. We hope that you and your staff will join us in Cincinnati to see our work first-hand, and join us for the third water quality summit so that you may ask any

questions regarding your concerns. Please do not hesitate to contact us with any questions relating to this letter. In addition, your staff may contact Tom Poy, Chief of U.S. EPA Region 5's Ground Water and Drinking Water Branch at poy.thomas@epa.gov or (312) 886-5991.

Sincerely,

Robert A. Kaplan

Robert Kaplan
Acting Regional Administrator

cc: Sylvester Jones, City Administrator, City of Flint
Keith Creagh, Director, Michigan Department of Natural Resources and the Environment