



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

**MAY 04 2017**

REPLY TO THE ATTENTION OF:

W-15J

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

Re: The City of Flint's April 19, 2017 Notification to EPA of its Long-Term Primary and Back-up Drinking Water Sources and Revised Corrosion Control Study Plan

Dear Mayor Weaver:

Thank you for your letter dated April 19, 2017, containing the results of the City's water source alternatives analysis and notifying us of your recommendation that the City designate the Great Lakes Water Authority (GLWA) as the City's long-term, primary water source. You also shared your recommendation that the City use the Genesee County Drain Commissioner (GCDC) as its back-up water source. Your letter also included a revised corrosion control study (CCS) plan for these recommended long-term and back-up sources.

EPA appreciates the information you have provided and commends the City Administration for all the effort that went into the alternatives analysis process and the process of arriving at a final recommendation. In light of your recommendations, EPA would like to raise two issues.

First, EPA appreciates the City's extension of the public comment period regarding the City's water source recommendations to 30 days. The longer comment period should provide City residents with a meaningful opportunity to make their opinions known to City leadership prior to the final source selection. In view of the City's extending the comment period, EPA respectfully requests that the City update its March 27, 2017 Drinking Water Source Selection Public Participation Plan, which was submitted to EPA on March 28, 2017, to reflect the new schedule that incorporates the extension. Specifically, EPA would like to know: 1) what public engagement opportunities/meetings are planned; 2) when do you anticipate that the City Council will be meeting to discuss the results of the public participation process; and 3) when do you anticipate that the City will be making its final decision and making that decision known to the public.


Second, members of EPA's Flint Technical Support Team reviewed the City's revised CCS plan and developed initial feedback for the City to consider. EPA believes that further information is needed in five different areas in order to strengthen the proposed CCS plan:

- 1) Confirmation of the degree and location of blending the GLWA and the GCDC waters;
- 2) Information about the water quality of the GCDC water and Genesee County's corrosion control study results;
- 3) Specific Corrosion Control Study Plan information;
- 4) Definition of acceptable results that will justify a decision that the studies can be concluded; and
- 5) The use of a wider phosphate dose range.

The enclosed document provides observations from EPA's Flint Technical Support Team for each of the five areas listed above. EPA understands that the revised CCS plan is subject to change based on the City's ultimate source water decision; however, EPA experts wanted to provide this initial feedback given our February 24, 2017 letter that provided the City and Michigan Department of Environmental Quality with comments on the original CCS plans submitted by the City on January 31, 2017.

Please do not hesitate to contact me at (312) 353-8320 or [korleski.christopher@epa.gov](mailto:korleski.christopher@epa.gov) to further discuss any questions the City may have regarding the content of this letter and the requirements of EPA's Order.

Sincerely,



for Christopher Korleski

Director, Water Division

Enclosure

cc: Richard Baird, Michigan Governor's Office  
Sylvester Jones, City Administrator, City of Flint  
Keith Creagh, Director, Michigan Department of Natural Resources  
Bryce Feighner, Director, Drinking Water and Municipal Assistance Division, MDEQ

**Observations from EPA's Flint Technical Support Team on  
Flint CCT Study Test Plan (April 13, 2017) by EE&T, Inc.  
(Attachment to April 19, 2017 Letter to EPA from Mayor Weaver, City of Flint)**

Members of EPA's Flint Technical Support Team reviewed the City's revised corrosion control study (CCS plan) and developed initial feedback for the City to consider. EPA believes that the City needs to further examine five different areas of its revised CCS plan in order to strengthen it. These five areas are listed below along with EPA's observations of additional information needs and considerations.

**1. Confirmation of the degree and location of blending the Great Lakes Water Authority (GLWA) and the Genesee County Drain Commissioner (GCDC) waters.**

- a. An estimation of the range of percent blend per month. It is assumed that it is a percentage of the water usage in Flint; therefore, a percent blend for each month of the year should be easily calculated based on historical data.
- b. EPA suggests that the plan consider the location where the blending will be done. It should consider and account for whether the percent blend will be consistent across the city of Flint or different across the distribution system. If the latter, it should account for projected blending ratios for differing areas of the city. It should also account for changes that might occur diurnally or seasonally.

**2. Information about the water quality of the GCDC water and Genesee County's corrosion control study results.**

- a. The results from Genesee County's CCS study will add strength to this analysis. Knowledge about the County's water quality goals, treatment scheme, including coagulant type, and the finished water chemistry of the County water will help with the review of the corrosion control study plan.
- b. Upon completion of GCDC's and the City's corrosion control studies, data from both projects should be compared to add additional weight to the City's results.

**3. Specific Corrosion Control Study Plan information**

- a. As the City's CCS planning unfolds, additional critical decisions will need be made as to the experimental plan. These decisions may be critical to the success of the plan. For example, the City should consider the following:
  - How will the 5-percent blend be obtained for the subsequent pipe rig test for Phase 2 of the City's CCS plan?

- Is the City taking into account the time needed to equilibrate the pipes to the blended water before the phosphate and pH tests are conducted?
  - How will the chemical feeds be designed and maintained?
  - Who will conduct the studies and how will they be trained?
- b. The City needs to be able to maintain consistent pH (7.2 and 7.5) so that conclusions may be drawn from the data.
- c. The City needs to determine if EPA's pipe loops will be reconfigured, or if additional loops will be employed. If additional loops are constructed, the City needs a plan for equilibration.

**4. Definition of acceptable results that will justify a decision that the studies can be concluded.**

- a. As discussed in the past, the proposed timelines are reasonable and are good for general planning; however, the six months for the GLWA water study (Phase 1) and the three months for the GLWA-GCDC blended water study (Phase 2) are arbitrary. Additional information is needed to know what data sets and results will be deemed conclusive, including a decision on what is the acceptable lead concentration criteria and other water quality parameter ranges for either water source.

**5. The use of a wider phosphate dose range.**

- a. Since the current phosphate dose is 3.5 mg/L to maintain 3.1 mg/L in the distribution system, the phosphate dose range needs to be wider to bracket the current dose. The range defined in the proposed CCS plan only evaluates whether the current dose is too high. It is possible that the optimal phosphate dose is higher than 3.1 mg/L.
- b. In addition, if there are turbidity issues, or an issue arising from aluminum or calcium, then the phosphate dose needs to be identified at the high end where it can be more easily observed. EPA recommends something on the order of 1 mg/L (as received), 2 mg/L, 3 mg/L, and 4 mg/L. If only one pH is used, then an even wider range could be studied.