Shekter Smith, Liane (DEQ)

From: Sygo, Jim (DEQ)
Sent: Friday, October 23, 2015 5:17 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ); Shekter Smith, Liane (DEQ)
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

This is Bob Kaplan's latest note. Let me know if you have any concerns with the highlighted additions.

From: Kaplan, Robert [mailto:kaplan.robert@epa.gov]
Sent: Friday, October 23, 2015 4:23 PM
To: Sygo, Jim (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Jim –

We are very close. I checked with the Task Force on the plan you sent to us incorporating EPA's comments. See annotations below. There are several changes (in red italics) that EPA feels need to be incorporated into the text to reflect our earlier comments (from Mike and Darren) and the subsequent call. Additionally, there is a recommendation at the end that was discussed but not incorporated into the writeup you sent which we also feel should be incorporated.

Please feel free to get back with me if you have any questions. We appreciate the opportunity to provide input and your willingness to address our comments.

- Bob

This will summarize our phone conversation of 10/19 and provide clarification regarding the previous comments.

The City of Flint converted back to purchasing of Detroit Water and Sewerage Department water on Friday October 16, 2015. No indications of upset in the distribution system have been reported to date.

Detroit Water and Sewerage Department (DWSD) has confirmed the use of Innophos "Phosphoric Acid 75% Technical" product which is NSF Standard 60 certified with a maximum allowable feed rate of 13 mg/L as product.

The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well. *Flint will need to test to ensure that pH is not significantly affected at the PO4 target dosage.*

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

Flint will continue Water Quality Parameter Monitoring in accordance with the LCR at the same 25 distribution locations used under the Flint River. In addition 10 of these locations also serve as total coliform monitoring sites, including disinfectant residual, and Flint will be told to, for the purpose of assessing water stability, conduct water quality parameter monitoring *for pH, alkalinity, orthophosphate*, along with turbidity and iron sampling will be at these 10

locations on a weekly basis as suggested. This will also ensure that a minimum recommended pH levels are being maintained throughout the system.

EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Lastly, we discussed additional lead drinking water monitoring Flint should do to better assess lead exposure, determine effectiveness of water source change and corrosion control, and identify lead sources. That discussion does not appear to be captured here.

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From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Friday, October 23, 2015 11:39 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Sounds Good.