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December 23, 2019

Kareem Adeem, Acting Director  
Newark Water Department  
920 Broad Street, Room B31-F  
Newark, NJ 07102

**RE: Newark Water Department - PWSID: NJ0714001  
Wanaque Gradient Corrosion Control Treatment Recommendation  
Approval Letter No. LCR180001**

Dear Mr. Adeem:

The Bureau of Water System Engineering (Bureau) is in receipt of the Corrosion Control Treatment (CCT) Recommendation for Newark Water Department's (Newark) Wanaque Gradient as identified in the *Wanaque Gradient Corrosion Control Review – Final Report* (Report) dated June 28, 2019. Newark's CCT recommendation for the Wanaque Gradient proposes no change to the current water treatment process. Zinc orthophosphate, a corrosion control inhibitor, is already being added upstream of the Belleville Reservoir Complex, by the North Jersey District Water Supply Commission (N.J.D.W.S.C.) which supplies water to the Wanaque Gradient. **Pursuant to 40 C.F.R. 141.81(e)(4) and 141.82(d), the Department approves the CCT recommendation in the Report and designates the existing use of zinc orthophosphate as the optimal corrosion control treatment for the Wanaque Gradient.**

Based on all available Lead and Copper Rule (LCR) compliance sampling results within the Wanaque Gradient distribution system, levels of total lead are below the 90<sup>th</sup> percentile action level exceedance for the Wanaque Gradient. Pipe scale analyses in the Wanaque Gradient have demonstrated that the orthophosphate has effectively caused phosphate crystalline scales (calcium-hydroxypyromorphite), plattnerite (tetravalent lead), and carbonate scales on the pipes. These scales are providing protection against lead corrosion, which is evident in the Lead and Copper Rule compliance sampling and sequential sampling as outlined in the Report. Therefore, this data confirms zinc-orthophosphate is the optimal corrosion control treatment for the Wanaque Gradient.

Thus, based on the Bureau's review of the Report and information presented in supporting documentation, the Bureau approves Newark's recommendation that no modification to the existing CCT for the Wanaque Gradient is required at this time.

Furthermore, in order to improve effectiveness of the existing CCT, Newark must complete the following:

1. As part of its required Water Quality Parameter (WQP) monitoring, Newark must monitor residual phosphate. Newark's proposed WQP Sampling Plan, submitted to the Bureau on July 16, 2019, is currently under review. Once approved, the frequency and location of monitoring must be conducted in accordance with the approved WQP plan. If, based on WQP monitoring, it is determined that an increase in orthophosphate may be necessary, Newark shall seek written approval from the Bureau to increase the dose. In certain areas of the Wanaque Gradient, the targeted residual phosphate level, as identified in the Report, of 1.8 mg/L as PO<sub>4</sub> was not being reached. Therefore, Newark must continue to review residual phosphate levels in the Wanaque Gradient supply and, if necessary, seek approval from the Bureau to:
  - a. Increase the zinc orthophosphate dosage rate for the entire Wanaque Gradient and/or
  - b. Provide booster zinc orthophosphate feed stations in areas where residual phosphate levels are found less than the targeted level of 1.8 mg/L as PO<sub>4</sub>, after obtaining necessary approvals from DEP.
2. In order to reduce stagnation and support the circulation of orthophosphate in the distribution system, and to improve overall water quality, Newark should continue looping, i.e. connecting dead-end water mains to other mains.
3. Newark must continue follow-up water quality parameter monitoring throughout the duration of the Supplemental Compliance Agreement and Order (SCAO) and as required under the LCR.

Newark will not be permitted to cease these approved CCT steps, regardless of whether lead and copper sampling demonstrates compliance with the respective action levels, without written approval from the Bureau.

The Bureau reserve the right to modify its optimal corrosion control treatment designation under 40 C.F.R. 141.82(h).

In addition to the existing CCT, Newark must also continue to comply with requirements outlined in the LCR, the July 25, 2018 Compliance Agreement and Order (CAO), and the March 29, 2019 SCAO to further protect residents from lead in drinking water:

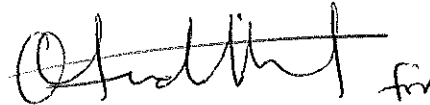
1. Public Education: The City of Newark will continue with a public education campaign to encourage residents to understand the risks of lead in their service lines in accordance with 40 C.F.R. 141.85 and CAO paragraph No. 38 and SCAO paragraph Nos. 38-40.
2. Lead Service Line Replacement: The City of Newark will continue a city-wide lead service line replacement program. Newark has agreed to replace the homeowner-owned lead service line at a cost not to exceed \$1,000 to property owners for anyone within the City of Newark in accordance with 40 C.F.R. 141.84 and CAO paragraph Nos.34-37 and SCAO paragraph No. 45.

3. Lead Testing at the Tap: Newark will continue to provide free lead testing to all residents in Newark pursuant to CAO paragraph No. 21(B). If a test result from a home located in the Wanaque Gradient is above 15 ppb, Newark will provide a free filter to that resident in accordance with SCAO paragraph Nos. 25-29 and in particular paragraph No. 27(A).

Your prompt attention to this matter is both necessary and appreciated. However, please also note that it is possible that further information and/or action may be necessary as both the Federal and State Safe Drinking Water programs continue to assess the implementation of the Federal Lead and Copper Rule to ensure the continued protection of public health.

If you have any questions regarding the above, please contact myself or Syed Rizvi of my staff at (609) 292-2957 or email at [steven.pudney@dep.nj.gov](mailto:steven.pudney@dep.nj.gov) or [syed-imteaz.rizvi@dep.nj.gov](mailto:syed-imteaz.rizvi@dep.nj.gov). When contacting the Department please reference the PWSID No. NJ0714001 and Letter No. LCR180001.

Sincerely,



Steven Pudney, C. Eng., MICE  
Section Chief - Engineering  
Bureau of Water System Engineering

- cc. Don Hirsch, Bureau Chief, Northern Bureau of Water Compliance and Enforcement  
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