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September 4, 2024

Mr. Norbert Molina
Supervisor of Buildings and Grounds
Bound Brook Board of Education
130 West Maple Avenue
Bound Brook, NJ 08805

re: **Water Sampling for Compliance with N.J.A.C. 6A:26-12.4**
Final Report: Lead in Drinking Water

Dear Mr. Molina,

We enclose the following documents and related information for compliance with the new NJ Department of Education Regulation related to Lead in Drinking Water in school buildings:

Sampling Report Narrative	3 pages
Water Sampling Logs and Results	7 pages
Laboratory Analytical Report (digital copy only)	139 pages

On August 02, 2024, a total of 78 drinking and cooking water samples were collected for Lead analysis in the District's buildings. All sample results were compliant with the referenced regulation and no sample result exceeded the 0.015 mg/L standard.

In fact, 69 of the 78 water samples showed no measurable Lead content. These results are shown as ND which means that no Lead was detected at or above the laboratory sensitivity limit of 0.002 mg/L.

This report along with the attached sample logs and results should be posted to the School District's website as noted in this report.

If you have any questions, please don't hesitate to call us.

Sincerely,

Patrick D. McGuinness

Patrick D. McGuinness, MS, P.E.
Vice President

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Sampling Report - Lead in Drinking Water
Bound Brook School District

1. Sampling Results Summary

Sample Collection Date	August 02, 2024
Number of Building(s) Sampled	7
Total Number of Samples Collected	78
Number of Samples with No Detectible Lead	69
Number of Samples Exceeding 5 ppb (but < 15 ppb)	0
Number of Samples Exceeding 15 ppb (0.015 mg/L) Standard	0

2. Water Sampling Procedures

Sampling protocols and procedures follow the EPA "3-T's Program" that was developed in 2006 for schools and Child Care centers. They recognize that the typical school building is actually a conglomeration of an original building with one or more additions, each of which typically having different plumbing system materials.

In addition, building sections constructed before 1986 likely have plumbing systems that used leaded solders on copper water lines. Very old buildings and public water supply systems may also still have lead piping. Other potential sources of Lead in drinking water systems include brass faucets, fittings, along with valve seats and stems that are used in the municipal and building piping distribution systems. It is important to note that "Lead-Free" plumbing components used since 1986 may actually contain up to 8% Lead by weight. In January 2014, this limit was lowered from 8% to 0.2% Lead.

The sampling protocol requires that water be collected as a "First-Draw" to ensure that the water sample has been standing for at least 8 hours. This is intended to replicate a "worst-case" situation since the Lead levels are usually lowered significantly after running the water even for a few moments.

All samples were collected in 250 ml contaminant-free containers. Laboratory analysis of the water samples was performed by Pace Analytical Services, LLC of Fairfield, NJ (NJ DEP Certification Nos. NJ 07010). The analytical method is per EPA Method 200.8 via atomic absorption, induction coupled plasma technique.

3. Sample Results and Discussion

Sampling results are discussed below and the sampling logs are appended to this report. All results are expressed as milligrams of Lead per liter of water (mg/L) and compared against the current 0.015 mg/L Action Level.

It is important to note that the laboratory results are reported in terms of micrograms per liter (µg/L). This is essentially equivalent to parts of Lead per billion (ppb) parts of water. The Action level also translates to 15 ppb.

A total of 78 water samples were collected on August 02, 2024 and analyzed for total Lead content. There were no sample locations where the laboratory results exceeded the 0.015 mg/L Action Level for Lead. On the other hand, 69 of the samples had no detectible levels of Lead present.

4. Additional Recommendations and Future Work

All water sample results showed acceptable results for Lead content. The following responses include those required by N.J.A.C. 6A:26-12.4 and our recommendations to maintain the drinking water quality as it relates to Lead contamination.

The NJ Dept of Education regulations require that:

- These sampling results are made publically available at the school building and on the School District's website.

- The School District shall collect drinking water samples and analyze for Lead at any drinking water outlet that has been replaced or after any alterations to the plumbing or service lines to the outlet. Do not consume or cook with water from the affected outlet until acceptable Lead results are obtained.

- Repeat water sampling within 3 school years or before June 30, 2028.

In addition, we suggest that the following responses to minimize the potential for Lead contamination of drinking water:

Administrative Responses:

- There are several factors that influence the potential for Lead corrosion in drinking water piping systems. These include the chemistry of the water supplied being supplied to the building, water temperature and velocity through the piping, the age and condition of the plumbing, and the amount of time the water sits "stagnant" in contact with piping and drinking water fixtures. This last factor is the only one that a building owner has any control of.

- School building codes require a minimum of one (1) drinking water tap for every 100 students of building capacity. Wherever a larger number of water taps exists, the usage factor for each tap decreases. This, in turn, increases the "stagnation time" along with the increased potential for Lead corrosion. It is recommended that the need for all the water taps be investigated and reduced where appropriate while maintaining the minimum of 1 tap per 100 students.

- Consider implementing a program to shut-off and replace (if needed) any drinking water fixture of appliance that is more than 35 years old (was installed before the 1986 Lead Ban took effect).

Operational and Maintenance Responses:

- EPA recommends that any water tap where the measured Lead content exceeds 5 parts per billion (PPB) or 5 µg/L be inspected and cleaned of line sediment to eliminate potential sources of Lead contamination. There was of 1 water sample above this level.

- Use cold water only for drinking or cooking. Higher water temperatures will increase the water's corrosion potential.

- The accumulation of line sediment on aerators and screens at the water taps is frequently the source of high levels of Lead. It is recommended that a program be established to regularly inspect for the presence of line sediment at all drinking water taps. Initially, an annual inspection is suggested. The inspection frequency should then be adjusted depending upon the amounts of sediment that is found and where it is found. Higher usage taps may accumulate sediment more quickly and need to be cleaned more often.

- It is known that flushing water through drinking water taps will reduce the levels of Lead present in the drinking water. It is also recommended that a program be established to run water at all drinking or cooking taps for at least one minute before students and staff return to school after long breaks, especially after Summer recesses.

Report prepared by:

Patrick D. McGuinness

Patrick D. McGuinness, MS, P.E.
Vice President