

# J.C. Broderick & Associates, Inc.

Environmental / Construction Consulting & Testing

September 6, 2016

Mr. James Meade  
Western Suffolk BOCES  
507 Deer Park Road  
PO Box 8007  
Dix Hills, New York 11746

**Re: Lead in Water Sampling  
Western Suffolk BOCES**

**Sites: Administration Building  
James E. Allen Elementary School  
JEA Alternative  
Wilson Tech, Huntington  
Wilson Tech, Northport**

**Facilities Building  
James E. Allen Junior Senior High School  
Wilson Tech Aviation  
Wilson Tech, Dix Hills  
Receiving Building**

**JCB#: 16-34958**

Dear Mr. Meade:

J. C. Broderick & Associates, Inc. (JCB) was retained by the Western Suffolk BOCES to perform an assessment and testing of the drinking water outlets servicing the above referenced school buildings for the presence of lead. The assessment and testing was performed in accordance with the United States Environmental Protection Agency (EPA's) protocols as recommended in their publication 3Ts for Reducing Lead in Drinking Water in Schools.

In summary, the assessment and testing performed indicate that the lead levels of the drinking water outlets servicing BOCES currently meet federal guidelines. Sampling was performed at one hundred seventy one (171) drinking outlets, and although lead was initially detected above the action level at only fourteen (14) of these locations, these outlets have been removed from service until further investigation, remediation and/or retesting is completed.

## Background

Lead is a toxic metal that can be harmful to human health when ingested or inhaled. Even small doses of lead can be harmful. Unlike most other contaminants, lead is stored in our bones, to be released later into the bloodstream. Even small doses can accumulate and become significant. The groups most vulnerable to lead include fetuses and young children. Drinking water represents one possible means of lead exposure.

Even though water delivered from your community's public water supply must meet Federal and State standards for lead, you may still end up with too much lead in your drinking water because of the plumbing in your facility and because of the building's water use patterns. The physical/chemical interaction that occurs between the water and plumbing is referred to as corrosion. The extent of which corrosion occurs depends on various factors such as the lead content of the building's plumbing and piping system, water velocity, temperature, alkalinity, chlorine levels, the age and condition of plumbing, and the amount of time water is in contact with the plumbing.



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Therefore, the critical issue is that even though your public water supplier may send you water that meets all Federal and State public health standards for lead, you may end up with too much lead in your drinking water because of the plumbing in your facility. The only way to be certain that lead is not a problem in your school building is to test various drinking water outlets (i.e., taps, bubblers, coolers, etc.) for the substance. That is why testing the water from your drinking water outlets for lead is so important.

In their revised technical document, 3Ts for Reducing Lead in Drinking Water in Schools the EPA outlines a recommended guidance and testing protocol that can be used by schools to determine the source and degree of lead contamination problems in their school buildings and how to remedy such contamination. This strategy was utilized for the assessment and testing of the above referenced school buildings and included the following:

- The Development of a Plumbing Profile;
- The Development of a Sampling Plan;
- Conducting Initial and Follow-Up (Flush) Sampling and Analysis;
- Determination of Interim and Long-Term Remedies;
- Informing the School Community.

#### Development of a Plumbing Profile

The purpose of developing a plumbing profile is to target potential problems and assess the factors that can contribute to presence and extent of lead contamination in a school building. That is, determine whether the school building may have a widespread problem or a localized concern.

The plumbing profile performed included the answering of a series of questions by an informed school building representative. Typically the questionnaire is completed by the Director of Facilities, the architect, or the plumber. The responses to these questions assisted in determining how and where the water entered, flowed through the school building and identifying and prioritizing sampling sites. A sample copy of the plumbing profile questionnaire can be referenced in the attachments to this report.

Due to the age of the school buildings, the number of additions, historic repairs and the lack of specific information pertaining to the lead-content of the plumbing and associated fixtures, comprehensive information was not obtained from the questionnaire identifying if, or where lead-containing plumbing may exist in the school buildings' plumbing system. Therefore a sampling plan was prepared to assess all High Priority Water Outlets or outlets used for drinking or cooking within the school buildings.

#### Development of a Sampling Plan

An inspection of all functional spaces located within the above referenced school buildings were performed to identify the locations of all high priority water. High priority water outlets are defined by the EPA as:

- Drinking fountains, both bubbler and water cooler style
- Kitchen sinks
- Classroom combination sinks and drinking fountains
- Home economic rooms sinks
- Teacher's lounge sink, nurse's office sink
- Classroom sinks in special education classrooms

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- Or any other sinks known to be visibly used for consumption (for example, coffee maker or cups are nearby).

The location of these water outlets were demarcated on Site Location Maps which have been prepared for each school building. Copies of these maps can be referenced as an attachment of this report.

Detailed information pertaining to each outlet sampled was recorded on a chain of custody document at the time of the sampling. Unique sample identification numbers were assigned to each sample that correspond the school building’s prepared site location map and chain of custody documents. The information recorded on the chain of custody forms included the type of sample collected, date and time of collection, name of the sample collector, location of the sample site and the name of the manufacturer that produced the outlet and the outlets’ model number, if applicable and available. The manufacturer and model number information recorded about each of the water coolers servicing the school buildings were also compared to known water coolers that contain lead-lined tanks and or lead containing components.

Drinking water samples were collected for lead analysis utilizing the two-step process for lead contamination identification as described in the above referenced EPA document. This includes the collection of both “Initial 1<sup>st</sup> Draw” and “Follow-Up Flush” samples subsequent to meeting the recommended stagnation period. All samples were sealed immediately after collection and delivered to a certified laboratory, in laboratory provided coolers, for the analysis of lead content. A copy of the laboratory certifications can be referenced as an attachment to this report.

Initial and Follow-Up Flush Sampling

All “initial 1<sup>st</sup> draw samples” collected were analyzed for the presence of lead. Reported results were then compared to the established EPA action level of twenty parts per billion (20 ppb). If the reported level of lead in the initial first draw samples were at or below the action level, the water outlet was designated as satisfying the Federal guidelines for lead levels.

If the initial 1<sup>st</sup> draw sample’s lead levels were above the action level, then further investigation and sampling was performed (including the analysis of the follow-up flush sample) in accordance with the EPA’s Sampling Strategy Flowchart located in their guidance document.

The following table summarizes the number of drinking water/high priority outlets sampled in each school building and their corresponding results. Detailed information pertaining to each water outlet sampled and their specific laboratory results can be referenced on the chain of custody and laboratory results located in the attachments.

School Building	Drinking Water Outlets Sampled	Locations which Exceeded EPA Action Level
Western Suffolk BOCES Central Administration	7	NONE
Western Suffolk BOCES Facilities Office	3	NONE
Western Suffolk BOCES Receiving Building	2	NONE

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School Building	Drinking Water Outlets Sampled	Locations which Exceeded EPA Action Level
JEA Alternative Program	24	Map location 6: Faucet/ fountain in classroom 112 Map location 10: Fountain in hallway by room 108
James E. Allen Elementary School	33	Map location 6: Fountain in hallway by classroom 312 Map location 11: Faucet in reception office Map location 15: Faucet in classroom 409 Map location 31: Fountain in hallway by nurse's office Map location 32: Faucet in gym office
James E. Allen Jr/ Sr High School	18	Map location 14: Fountain in hallway by room 529 Map location 15: Fountain in hallway by the stage Map location 16: Fountain in hallway by room 520
Wilson Tech Dix Hills Building A	17	Map location 16: Faucet in kitchen in room 106 Map location 17: Faucet in faculty room 107
Wilson Tech Dix Hills Building B	14	Map location 13: Faucet in classroom B2 kitchen
Wilson Tech Dix Hills Building C	11	NONE
Wilson Tech Dix Hills Building D	6	NONE
Wilson Tech Dix Hills Building E	4	NONE
Wilson Tech-Northport Campus	11	NONE
Wilson Tech-Huntington Campus	17	Map location 12: Faucet in health aide class
Wilson Tech-Aviation Facility	4	NONE

Interim and Long-Term Remediation

Each of the above referenced outlets which exceeded the action level have been removed from service until further investigation, remediation, and or retesting is completed.

In addition to the locations identified above, five (5) other locations revealed concentrations of lead between fifteen (15) and twenty (20) parts per billion. Although these concentrations are below the EPA Action Level there is concern that potential upcoming New York State regulations may expand to include this criteria. Therefore, BOCES has elected to remove these fixtures from service for further investigation, remediation, and or retesting.

For all active water outlets, it is recommended that BOCES perform routine control measures including, but not limited to:

- Maintain all drinking water outlets, screens/aerators, and any associated filters
- Develop flushing program for extended non-use
- Use only cold water for food and beverage preparation
- Instruct users to run the water before use or drinking
- Communicate with building occupants the non-potable locations such as faucets in classrooms, bathrooms, and custodial areas indicating that water should not be consumed

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For more information pertaining to these control measures, please reference the EPA's guidance document entitled "Drinking Water Best Management Practices for Schools and Child Care Facilities Served by Municipal Water Systems."

#### Informing the Public

EPA recommends that schools conducting lead-in-drinking-water sampling programs comply with the public information components of the Lead Contamination Control Act. There are two components:

1. Notify relevant parent, teacher, student, and employee organizations of the availability of your sampling program results, and
2. Make copies of the sampling results available in your administrative offices "for inspection by the public, including teachers, other school personnel and parents."

Given the health effects of lead, EPA advocates that any school conducting sampling for lead make public any test results. In addition, such schools should identify activities they are pursuing to correct any lead problems.

There are six (6) basic public notification methods recommended by the EPA that should be applied alone, or in combination, to communicate lead-in-drinking-water issues and the meaning of your sampling results. The method(s) that best suits BOCES particular situation should be chosen and can include:

- Press Releases
- Letters/Fliers
- Mailbox or Paycheck Stuffers
- Staff Newsletters
- Presentations, or
- Email and Web Sites.

Advice, suggestions and samples to assist in the public notification process is available from the EPA in their 3Ts for Reducing Lead in Drinking Water in Schools. This publication is available online in the EPA's website.

It should be noted that this sampling was performed in accordance with current guidelines. Should the guidelines change, or legislation dictate other criteria, these results may need to be reevaluated. If you need any further assistance, please feel free to contact our office.

Sincerely,



Edward McGuire  
**J.C. Broderick & Associates, Inc.**