MALVERNE UNION FREE SCHOOL DISTRICT
ADMINISTRATION BUILDING
301 Wicks Lane
Malverne, NY 11565
516-887-6405
FAX: 516-596-2910

Dr. James H. Hunderfund
Superintendent of Schools

Dear Malverne School Community,

J.C. Broderick & Associates, Inc. (JCB) was retained by the Malverne Union Free School District to perform an assessment and testing of the drinking water outlets servicing in our schools and Administration building for the presence of lead. The assessment and testing was performed in accordance with the United States Environmental Protection Agency (EPA) protocols as recommended in their publication 3Ts for Reducing Lead in Drinking Water in Schools.

On Tuesday, September 6, 2016 the New York State Department of Health (NYS DOH) enacted an emergency regulation; 10 NYCRR Subpart 67-4, Lead Testing in School Drinking Water. In this regulation, the NYS DOH imposes an action level of fifteen parts per billion (15 ppb), which is lower than the EPA's action level of twenty parts per billion (20 ppb).

The initial assessment and testing performed indicate that the lead levels of all tested potable (drinking) water outlets currently servicing the School District meet both the federal guidelines and state regulation action levels. Sampling was performed at two hundred eighty-four (284) outlets and lead was detected above the EPA action level at only eight of these locations and above the new DOH action level at an additional three locations.

Each of these outlets were removed from service and remedied. Retesting revealed results below the action level. The sampling results are available in District Operations in the Administration Building.

As always, the health and safety of our students, staff, and community is our top priority. We will continue to keep you informed of any potential changes regarding this matter and thank you for your continued support.

Sincerely,

Dr. James Hunderfund
Superintendent

Attachment No. 1 Malverne Union Free School District JCB#16-34197	
School Building	**High Priority Outlet Locations which Exceed EPA and/or DOH Action Levels**
Administration Building	NONE
Davison Elementary School	**Exceed EPA 20ppb AL** Map location 28/29: Fountain in Room 102 **Exceed DOH 15ppb AL** Map location 42: Faucet in Room 201
Downing Elementary School	**Exceed EPA 20ppb AL** Map location 4: Fountain in Room 212 Map location 9: Fountain in Room 214 Map location 10: Fountain in Room 213 Map location 32: Drinking Water in Room 110 Coat Closet **Exceed DOH 15ppb AL** Map location 31: Faucet in Room 110a Map location 48: Faucet in Conference Room-former Health Room
Malverne Middle School	**Exceed EPA 20ppb AL** Map location 36: Northern Most Faucet in Room 201K Map location 38: Faucet Closest to Door in Room 201K **Exceed DOH 15ppb AL** NONE
Malverne High School	**Exceed EPA 20ppb AL** Map location 32: Nurse's Office Sink **Exceed DOH 15ppb AL** NONE

J.C. Broderick & Associates, Inc.

Environmental / Construction Consulting & Testing

1775 Expressway Drive North
Hauppauge, NY 11788
631.584.5492
Fax: 631.584.3395
www.jcbroderick.com

July 20, 2016

Mr. Spiro Colaitis
Malverne Union Free School District
Administration Building
301 Wicks Lane
Malverne, New York 11565

Re: Lead in Water Sampling
Malverne Union Free School District
5 School Buildings

Sites: Malverne High School
Davison Elementary School
Administration Buiding
Malverne Middle School
Downing Elementary School

JCB#: 16-34197

Dear Mr. Colaitis:

J. C. Broderick & Associates, Inc. (JCB) was retained by the Malverne Union Free School District 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 high priority water outlets servicing the School District meet federal guidelines. Sampling was performed at two-hundred eighty-four (284) locations, and although lead was initially detected above the action level at only eight (8) high-priority water outlets, these outlets have either been remedied and retested, or removed from service.

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.

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 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 district architect, or the district 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. Additionally, to assist with the school's plumbing profiles sampling of non-potable water outlets were also performed. Results of these samples are also included in the attachments of this report.

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Mr. Spiro Colaitis
Malverne Union Free School District
Lead in Water Sampling
5 School Buildings
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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 outlets or water outlets that are regularly used for drinking or cooking. 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
- 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 1st 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 1st 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 20 ppb action level, the water outlet was designated as satisfying the Federal guidelines for lead levels.

If the initial 1st draw sample's lead levels were above the 20 ppb 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.

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The following table summarizes the total number of water outlets sampled inclusive of both the high priority water outlets as well as the non-potable locations such as classroom/bathroom sinks and utility areas. The table also summarizes the locations of any high priority water outlets which exceeded the EPA action level. 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	Total Water Outlets Sampled	High Priority Outlet Locations Which Exceeded EPA Action Level
Administration Building	7	None
Davison Elementary School	58	Map Location 28/29: Fixture in Room 102
Downing Elementary School	60	Map Location 21: Fixture in Room 110A Map Location 4: Fixture in Room 212 Map Location 6: Fixture in Room 214 Map Location 10: Fixture in Room 213
Malverne Middle School	72	Map Location 36: Fixture in Home Economics Rooms (Northern Most) Map Location 38: Fixture in Home Economics Room (Closet To the Door)
Malverne High School	87	Map Location 32: Fixture in Nurse's Office

Interim and Long-Term Remediation

Each of the high priority outlets which exceeded the action level have either been retested after remediation measures have been completed, or have been removed from service. Laboratory results for any retesting can be found in the attachments to this report.

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

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

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."

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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 the school districts 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.

If you need any further assistance please feel free to contact our office.

Sincerely,

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