

Intended for

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Director of Operations, Facilities, and Transportation

North Shore School District 112

Highland Park, Illinois

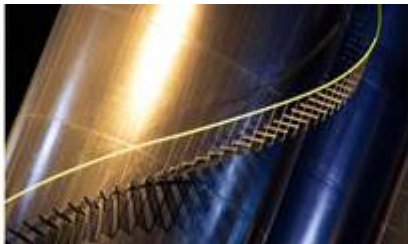
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**North Shore School District 112
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DRINKING WATER TESTING**



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**North Shore School District 112
Green Bay Administrative Offices
Drinking Water Testing**

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TABLE

Table 1: Summary of Water Quality Standards

ACRONYMS AND ABBREVIATIONS

AL	Action Level
Fixture	Drinking fountains, sink faucets, bottle fillers etc.
IDPH	Illinois Department of Public Health
IL ELAP	Illinois Environmental Laboratory Accreditation Program
mg/L	milligrams per liter
ppb	parts per billion
Ramboll Environ	Ramboll Environ US Corporation
NELAP	National Environmental Laboratory Accreditation Program
NSSD 112	North Shore School District 112
RL	Reporting Limit
USEPA	United States Environmental Protection Agency Unit
Conversion	1 ppb = 0.001 mg/L (15 ppb = 0.015 mg/L)

1. INTRODUCTION

The following report summarizes the findings of the lead in drinking water testing conducted for North Shore School District 112 (NSSD 112).

Water sampling was previously performed by the City of Highland Park. NSSD 112 collected additional follow-up samples after Highland Park release the results of their sampling. The purpose of this sampling was to collect additional follow-up samples from select fixtures that had been repaired or replaced, and test classroom and select restroom sinks which were not included in the previous testing performed by the City of Highland Park.

A total of 498 samples were collected from 12 school buildings. Sample locations were selected by NSSD 112 and included all classroom sinks and fountains that were recently repaired or replaced. The protocol also included samples from 2 sinks in each science room, two classroom bathroom sinks per wing and 1 sink from common bathrooms off corridors. This applied only when the sinks in each science room/bathroom were the same model. When more than one type of sink was present at least one set of samples was collected from each type. All other sinks, including classroom sinks, would remain in the protocol.

All samples were collected from the fixtures as "first draw" and "flush". Each fixture was identified the day prior to sampling and flushed and a sign stating "Testing in Progress – Do Not Use" was then placed on each fixture by NSSD staff. Water was allowed to rest in the fixture overnight. On the following day Ramboll Environ collected first draw samples and removed the sign. Water was run through each fixture for approximately 30 seconds following the first draw sample and a flush sample was collected.

A summary table of the results is included in Appendix A. The results for each building are included in Appendix B. Laboratory reports are in Appendix C.

Samples were collected by Ms. Stephanie Stavropoulos, Associate with Ramboll Environ US Corporation (Ramboll Environ) and Mr. Scott Fountain, Senior Associate with Ramboll Environ. Sampling was performed on December 20 and December 21, 2016. Project management was performed by Mr. Robert Livingston, RS, LEHP Manager with Ramboll Environ. Project oversight was provided by Mr. Robert Rottersman, MS, CIH Principal with Ramboll Environ.

2. DISCUSSION

The United States Environmental Protection Agency (USEPA) and others are concerned about lead in school drinking water because children are most susceptible to the health effects of lead. Even though the water that enters a school or daycare facility may meet federal standards, materials in the plumbing system and water use patterns may cause elevated lead concentrations in the water. Lead is a contaminant that can be introduced into potable drinking water after treatment and distribution by a water provider. This can occur from possible leaching of the metal from pipes or sealing materials used in joints and other plumbing connections. Due to potential contaminant sources after water leaves the treatment facility, testing for this metal normally occurs at the tap of the end user.

Current USEPA guidelines include methods for testing and analysis of lead in water. Because lead may be in the plumbing components of the water distribution system, testing has been designed to collect a sample as the 'first draw' of water from a fixture followed by a short flush and collection of a

second sample called a 'flush' sample. The purpose is to attempt to identify elevated lead concentrations in the fixture or 'first draw' versus any lead concentration caused by the piping system leading to the fixture or 'flush' sample.

When first draw sample results are elevated, it typically reflects on the water in the fixture or the piping immediately upstream from the fixture (behind the wall). If the follow-up flush samples also have elevated lead concentrations (above 5 parts per billion [ppb]), the water in lateral piping further upstream from the fixture may be contributing to lead concentrations in the first draw sample. However, if the results from the flush sample is close to or less than 5ppb it is unlikely that the water in the upstream plumbing is contributing to the elevated lead concentration in the first draw sample. If flush sample results significantly exceed 5ppb, the lead in the water may be coming from the plumbing lines upstream from the fixture¹.

3. STANDARDS AND GUIDELINES

Water from Lake Michigan is treated at the City of Highland Park's Water Plant and sent through a network of pipes to the community and the schools of North Shore School District 112. The City of Highland Parks Water Production Division is responsible for treatment of the water prior to distribution and to perform water testing in accordance with the USEPA regulations and make the results available to the public. Results of these tests are posted on the City's Public Works website.

The USEPA regulates drinking water quality through the Safe Drinking Water Act under the National Primary Drinking Water Regulations. These are legally enforceable standards that apply to public water systems. Primary standards protect public health by limiting the levels of contaminants in drinking water. Primary standards are regulatory limits. At the time of sampling there were no federal requirements for school districts to test drinking water. Regulatory responsibility for sampling and compliance with this standard rests with the water supplier. However, as of Monday, January 16, 2017, Governor Bruce Rauner signed Senate Bill 0550 which will require the testing of drinking water in schools (pre-K through grade five) and daycare centers throughout Illinois for lead contamination no later than the end of 2018 based on the age of the building. Mitigation actions for elevated concentrations of lead in water and state program requirements are currently under development by the Illinois Department of Public Health.

The following chart presents the criteria for lead under the National Primary and Secondary Drinking Water Regulations.

Summary of Federal Water Quality Standards

Contaminant	Action Level (AL)	Primary Standard (enforceable)
Lead	0.015 mg/L	0.020 mg/L

mg/L: milligrams per liter

¹ Reference USEPA 3Ts for Reducing Lead in Drinking Water Schools Revised Technical Guidance, October 2006.

4. RESULTS

All lead levels were below the USEPA action level for lead with the exception of the following locations:

- Seven (7) first draw samples at Edgewood;
- Three (3) first draw samples at Elm Place;
- Three (3) first draw samples and one (1) flush sample at Braeside;

- Two (2) first draw samples at Northwood;
- One (1) first draw sample at Indian Trail;
- Five (5) first draw samples and two (2) flush samples at Wayne Thomas; and
- Two (2) first draw and one (1) flush sample at Sherwood

Samples with results between the reporting limit and the action level were identified at these locations:

- Five (5) first draw samples at Edgewood;
- Three (3) first draw samples at Elm Place;
- One (1) first draw sample at Braeside;
- One (1) first draw sample at Sherwood;

- Four (4) first draw samples at Northwood;
- Four (4) first draw and four (4) flush samples at Wayne Thomas; and
- One (1) first draw sample at Indian Trail

A summary table is included in Appendix A. Individual school sample results are located in Appendix B. Laboratory reports are provided in Appendix C.

Samples were by First Environmental Laboratories, Inc., Naperville, IL, using Lab Method 200.7R4.4. This method has a Reporting Limit (RL) of 5ppb for lead, and is the lowest amount that can be detected when routine weights/volumes are used without dilution. First Environmental Laboratory participates in the Illinois Environmental Laboratory Accreditation Program (IL ELAP) and National Environmental Laboratory Accreditation Program (NELAP) accreditation number 100292, certificate number 003928.

4. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on the samples results obtained during the days of sampling:

- Lead levels in the water samples collected at all twelve of the NSSD 112 school buildings were found to be below the USEPA AL for drinking water with the exception of the samples detailed in Section 3 above and in the tables located in Appendix A and B.
- Fixtures above the AL should be taken out of service, re-tested and/or replaced per USEPA guidance (No direction or instruction regarding mitigation of elevated lead levels is provided in the new Illinois Senate Bill. It is our understanding that mitigation is currently under consideration by IDPH).
- Some samples were found to be above the reporting limit of 5ppb and under the new legislation the results would need to be communicated with parents and legal guardians of the students in each school in a written form or electronically.

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- Schools where samples are below the reporting limit should be posted on the school website.
- Note that at any point during the determination of lead in the water of the district schools, NSSD 112 may elect to replace any fixture that has demonstrated lead concentrations above the EPA AL (or level adopted by IDPH) without regard to flush or retest sample results.
- Some of the water samples collected during this survey are considered retesting following the replacement of fixtures that had previously elevated sampling results (See * in Appendix B). If the retest result is still elevated the USEPA recommends a through flushing of the fixture and pipe, because the replacement work may have caused disturbance of the material in the pipe. If aerators are present they should be removed and cleaned before new samples are collected. If further testing indicates that first draw and flush sample results are below the AL the fixture can remain in service.
- If the District elects to retest fixtures with elevated lead concentrations that were tested for the first time during this survey, that individual fixture should not be used for any drinking purposes until retesting confirms levels below the AL. However, if retesting confirms that lead continues to be present it is likely that the best option will be to replace the fixture.
- Because the samples were collected prior to the effective date of the new legislation, NSSD 112 will be required to request a waiver to meet the requirements of legislation from IDPH. Ramboll Environ can assist you with this request as soon as the department completes the program details.

If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,

Ramboll Environ US Corporation



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