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**Management Plan
for
Lead-in-Water**

MAY 2018

IEA Project #201610632





Management Plan for Lead-in-Water

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1.0 Purpose

Belle Plaine Schools is committed to providing a safe working and learning environment for employees and students. This Management Plan for Lead-in-Water was developed to reduce the potential for exposure to lead in water and to comply with Minnesota Statute 121A.335, as well as recommendations from the Environmental Protection Agency's (EPA's) *3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance* (2006) and the Lead Contamination Control Act (LCCA) of 1988, the Minnesota Department of Health (MDH) and the Minnesota Department of Education (MDE).

Minnesota Statute 121A.335 requires public school buildings serving kindergarten through grade 12 to test for lead in water in potable water sources (water for consumption) every 5 years. The MDH and MDE have published *Reducing Lead in Drinking Water: A Technical Guidance and Model Plan for Minnesota's Public Schools*, which presents a model plan that school districts can choose to adopt as part of the requirement of Minnesota Statute 121A.335. The *EPA 3Ts* was created by the EPA to identify and reduce lead in drinking water in schools. Lead is a metal that usually enters drinking water through the distribution system, including pipes, solders, faucets, and valves. Lead levels in water may increase when the water is allowed to sit undisturbed in the system. Exposure to lead is a significant health concern.

The *EPA 3Ts* has recommended that schools take remedial action to address lead-in-water exposure whenever lead levels exceed 20 parts per billion (ppb). The MDH and the MDE have jointly provided guidance that there is no safe level of lead and that districts should work to minimize the risk of lead. MDH and MDE recommended actions are described in section 4.0 of this plan.

2.0 Water Sampling Program Development

Identified potable water sources in district facilities, including sinks and drinking fountains in kitchens, staff lounges, classrooms, home economics classrooms, and hallways, will be sampled during the school year throughout the district at least once every five years.

Prior to sampling the following takes place:

- An inventory of potable water taps is taken;
- All drinking fountains are checked to ensure the EPA has not identified them as having a lead lined tank under LCCA. This list can be found in Appendix A.
- Water outlets in restrooms, custodial closets, science labs, art rooms, and other general-purpose workrooms are not included in the sampling inventory, and should be clearly marked not for drinking.

Potable water sources are to be resampled at least once every five years, per MN Statute 121A.335, or when a fixture or water supply is repaired or replaced, or after construction activities that may impact the plumbing system. A testing schedule is included in Appendix B which has each school scheduled to complete testing every 5 years.

3.0 First Draw Tap Monitoring

Water sampling of the identified cold water taps is conducted as a "first draw" sample prior to usage on the day of sampling. Sampling begins at the taps closest to building entry point of water source to prevent accidental flushing of other sample locations in the building. Normal usage of building should occur the day before sampling; sampling should not take place on Mondays or after non-school days.

Taps included in the first draw sampling should not be used for 6-18 hours prior to sampling. If the district cannot ensure identified taps were used the day prior to sampling, flushing will occur according to EPA protocol (2-3 minutes, 8-18 hours prior to sampling). Water samples of 250 milliliters (ml) are analyzed by an accredited testing laboratory, using EPA approved analytical methods and quality control procedures (i.e. such as the ICP/MS EPA Method 200.8).

4.0 Maintenance Procedures

When lead content exceeds 20 ppb, fixtures should be taken out of service until the lead content can be reduced to 20 ppb or lower. While fixtures can still be used for drinking and cooking, MDH and MDE recommend actions be taken to determine the source of lead and reduce lead levels in fixtures when sampling reveals lead content between 2 and 20 ppb. A lead-in-water concentration of or less than 20 ppb (maximum) is considered acceptable by the EPA. Potable water outlets found to have greater than this concentration are repaired, replaced, or flushed.

In addition, the MDH and MDE model plan recommends routine maintenance take place to prevent and help reduce elevated lead levels in drinking water. This includes cleaning faucet aerators where lead-containing materials may accumulate on a quarterly basis and following manufacturer's recommendations for water softener settings to ensure an appropriate level of hardness. The following maintenance procedures are based on MDH/MDE recommended Lead Hazard Reduction Options, located in Appendix D:

Flushing

Flushing may be used as an alternative to repair or replacement. For any location with an elevated lead level, conduct flush sampling to determine if a longer flush will reduce lead levels to an acceptable level. If results indicate that flushing will reduce lead to acceptable levels, implement a flushing program which includes documentation of daily flushing and periodic program review.

Individual Tap Flushing

MDE and MDH suggest running each tap for 2 to 3 minutes in the morning before children arrive, and 2 to 3 minutes midday if the tap has been unused for the morning period. Periodic testing may be done prior to and after the midday flushing to ensure the lead concentrations have remained low throughout the morning hours. If they have not, the flushing time should be increased, or another option implemented.

Main Pipe Flushing

The MDH and MDE model plan explains that Main Pipe Flushing can be used if lead levels are found to be high throughout the entire school or are confined to a certain area of the school. Flushing should be completed each day school is in session. Begin by flushing the tap furthest away from the water source for at least ten minutes; then flush the tap the second furthest away and continue until all taps have been flushed. Periodic testing may be done to ensure the lead concentrations have remained low and that the flushing protocol is effective.

In addition, it is recommended to flush potable water outlets following any two-week vacancy or prior to the beginning of school in the fall, regardless of the lead levels found in the most recent sampling. As long as the fixtures are used regularly, lead levels should remain acceptable. The fixtures should be flushed when the building has been at low occupancy, for example, following school breaks.

Repair and Replace Options

Recommendations of one of the following treatment options for fixtures with lead levels approaching or exceeding the EPA action level may be considered for implementation:

- Install a National Sanitation Foundation (NSF) certified filter for lead reduction.
 - The filter selected should work by size exclusion of lead particles as opposed to lead adsorption. Filters should have tight pores (1-micron or less). NSF lists many such filters on its website.
 - Following replacement, retest the first-draw lead level after flushing the line 8-18 hours prior to testing to confirm that filter is successful in reducing lead levels.
 - Note: Point-of-Use (POU) Treatment Device systems may be subject to Department of Labor and Industry (DLI) or local administrative authority plan review and approval prior to installation. Contact DLI at 651-284-5063 for more information.

- Investigate further to determine the source of the lead responsible for an elevated lead level. Collecting multiple samples in a row can assist in determining the location of the lead-containing component (e.g. fittings for cold water supply lines). Samples should be collected upstream of the cold supply lines. Once the source is identified, remove, replace with lead-free component, and retest.
- If sampling indicates that fixture is the source of the elevated lead level, replace fixture with a "lead-free" fixture certified to NSF/ANSI 372 or NSF/ANSI 61-G. The *Reduction of Lead in Drinking Water Act* redefines "lead-free" as "not more than a weighted average of 0.25% lead when used with respect to wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures." Effective January 4, 2014, drinking water system components sold or installed must adhere to this new requirement. A list of EPA Lead Free Certification Marks can be found here: <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100GRDZ.txt>
- Remove fixture from service by disconnecting it from the water supply and/or clearly mark water fixtures that are not for drinking or cooking.

The MDH recommends taking the following actions at 2 ppb to 20 ppb:

- Retest the sampled tap and attempt to more accurately determine the source of the lead; consider monitoring tap more frequently until the source of lead is found and removed;
- Consider the feasibility of flushing or other steps to minimize lead exposure, taking into account other actions that the school may already have in place;
- Make all test results and lead education materials accessible to community, such as on a website, or annual report, and available upon request.

5.0 Communication of Results and Follow-up Actions

Per Minnesota Statute 121A.335, a school district that has tested its buildings for the presence of lead shall make the results of the testing available to the public for review and must notify parents of the availability of the information. It is recommended that a copy of the district's Lead-in-Drinking Water Testing reports be made available to staff and the public through the district's administrative offices and district website.

Notification is accomplished by publishing it on ISD #716's website that is available to staff, student, parents and the public. The results will also be communicated in school board meeting minutes. For example notifications, see the MDE and MDH *Education and Communication Toolkit: Reducing Lead in Drinking Water, A Technical Guidance and Model Plan for Minnesota's Public Schools*, located on the MDH website.

The MDE and MDH guidance document states in their Model Plan that School Management should:

- Assign a designated person to be the contact;
- Notify affected individuals about the availability of the testing results within a reasonable time. School employees, students and parents should be informed and involved in the communication process. Results of initial and any follow-up testing should be easily accessible along with documentation of lead hazard reduction options. Posting the information on a website is preferred, but the information should also be available to those without easily accessible internet access. Examples of other information venues are: meetings, open houses, and public notices; and
- Identify and share specific activities pursued to correct any lead problems. Local health officials can assist in understanding potential health risks, technical assistance and communication strategies.

6.0 Recordkeeping

Lead-in-water testing reports are located and available for review in the room 507 at the High School, District health and safety files. See Appendix C for the most recent sampling locations and results. This includes a floor plan with test locations and recommendations for further action if necessary.

Belle Plaine Schools retains lead-in-water records for a minimum of five years.

*The last lead in water sampling was conducted in 2013, district wide. The next round of sampling is planned for the fall of 2018.

Appendix A

EPA Factsheet: Lead in Drinking Water Coolers

Appendix B

Testing Schedule

**Lead in Water Sampling Schedule
Belle Plaine Schools**




<u>School Year</u>	<u>Schools to be Sampled</u>
2018-2019	District Wide (4 buildings)
2023-2024	District Wide (4 buildings)
2027-2029	District Wide (4 buildings)

Appendix C

*Lead-in-Water Testing Results and Locations
(see health and safety files)*

Appendix D

Recommended Lead Hazard Reduction Options

Lead Level At The Tap	Lead Hazard Reduction Options
<p data-bbox="248 363 427 426">< 2 ppb or Non-Detected</p> 	<ul data-bbox="492 384 1369 510" style="list-style-type: none"> • Lead was not detected. Tap may be used as normal; • Record result and test again in 5 years; and • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
<p data-bbox="248 741 427 772">2 ppb to 20 ppb*</p> 	<p data-bbox="451 541 1385 636">The tap may be used for cooking and drinking water while steps are taken to reduce overall exposure. A higher number of taps with elevated results increases the urgency to implement hazard reduction.</p> <p data-bbox="451 657 621 678">Options include:</p> <ul data-bbox="492 699 1369 951" style="list-style-type: none"> • Retest the sample tap and attempt to more accurately determine the source of the lead; consider monitoring tap more frequently until the source of lead is found and removed; • Consider the feasibility of flushing or other steps to minimize lead exposure, including limiting softened water supplies to hot water taps only, taking into account other actions that the school may already have in place; • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request.
<p data-bbox="280 1297 394 1329">> 20 ppb*</p> 	<p data-bbox="451 1014 1271 1077">Action should be taken to reduce exposure. The specific action(s) taken will be dependent on individual school conditions.</p> <p data-bbox="451 1098 621 1119">Options include:</p> <ul data-bbox="492 1140 1385 1518" style="list-style-type: none"> • Remove tap from service until problem is demonstrably corrected by replacement, a flushing program, filtration, or treatment; • Do <i>not</i> use tap for cooking or drinking water; • Retest the tap and attempt to determine the source of the lead; If the tap is not replaced, consider monitoring tap more frequently, such as annually, until the source of lead is found and removed; • Implement a flushing protocol or other lead hazard reduction option; sampling should be use to evaluate effectiveness; • Make all test results and lead education materials accessible to the community, such as on a website, or annual report, and available upon request; and • Provide targeted communication and education to individuals, parents, and staff members that routinely use that tap.

*established by EPA 3Ts guidance; if EPA amends, Table 3 will be adjusted to be consistent with new value