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Management Plan for Lead-in-Water

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Mesabi East Public Schools

Management Plan for Lead-in-Water

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1.0 Purpose

Mesabi East Public 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, recommendations from the Environmental Protection Agency's (EPA's) *3Ts for Reducing Lead in Drinking Water in Schools, Child Care Facilities: A Training, Testing, and Taking Action Approach Revised Manual* (October 2018), 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 pre-kindergarten and kindergarten through grade 12 to test for lead in water in potable water sources (water for consumption) every five 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.

MDH, MDE, and the EPA 3Ts have 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.
- Samples are collected from all water fixtures within the district, including restrooms, custodial closets, science labs, art rooms, and other general-purpose workrooms.

Potable water sources are to be resampled at least once every five years, per MN Statute 121A.335, when a fixture or water supply is repaired or replaced, or after construction activities that may impact the plumbing system.

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 the 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. 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, per MDH and MDE recommendations. While fixtures can still be used for drinking and cooking when sampling reveals lead content between 2 and 20 ppb, MDH and MDE recommend actions be taken to determine the source of lead and reduce lead levels in fixtures.

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:

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 elevated lead levels 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>
- Note: Code compliance does not ensure that there is no lead present in plumbing fixtures or address how fixtures are used in the buildings, even plumbing components designated as lead free can leach lead depending on water usage and water quality. The only way to know if lead is present is to test.
- Remove fixture from service by disconnecting it from the water supply and/or clearly mark water fixtures that are not for drinking or cooking.

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 are required to 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 a statement with the district's annual notifications that are available to staff, student, parents and the public.

6.0 Recordkeeping

Lead-in-water testing reports are available for review through the District Office. See Appendix B for the most recent sampling locations and results.

Appendix A

EPA Factsheet: Lead in Drinking Water Coolers

Appendix B

Lead-in-Water Testing Results and Locations

Appendix C

Notification Documentation

