NJDEP DIVISION OF WATER SUPPLY & GEOSCIENCE

Lead in Drinking Water: Guidance for Schools and Child Care Facilities Served by Public Water

Although schools served by public water systems are not required by either federal or state law to test their drinking water for lead, districts may decide to voluntarily undertake a lead water testing program.[1] To assist districts that decide to test for lead in the water in their school buildings, the U.S. Environmental Protection Agency (EPA) has developed a comprehensive set of guidelines: 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance. This document provides detailed information about how districts should undertake sampling and testing the water in their buildings for lead to ensure the health of their students, faculty, and staff. This guidance is based on the federal Lead and Copper Rule, which was developed to reduce lead and copper levels in drinking water supplied by public water systems and others.

EPA's Lead and Copper Rule established a level, which, if exceeded, requires a public water system to take certain steps to reduce the level of lead. That level, known as the Action Level, has been set at 15 parts per billion (ppb).

Although public water systems that supply water to schools and child care facilities may comply with the Federal lead action level of 15 ppb, schools may still have elevated lead levels at the tap. These elevated levels may be caused by lead leaching into the water once it enters the school building, due to lead-containing pipes and fixtures within the school. The best way for schools to know if there are elevated levels of lead in their facility's drinking water is to test it.

Children are the most susceptible to the adverse effects of lead because their bodies are still developing, but lead also has adverse health impacts for adults. The body cannot tell the difference between lead and calcium and lead that is not excreted is absorbed in the bones. No safe blood lead level in children has been determined. School officials need to know if the drinking water that students, teachers, and staff are consuming contains elevated levels of lead because of the associated serious health problems. For children, these adverse effects include reduced IQ, learning disabilities, poor classroom performance, hyperactivity, behavioral problems, impaired growth, reduced attention span, and hearing loss.

NJDEP recommends that schools implement their own programs for testing drinking water as part of an overall plan for reducing environmental threats as well as implementing best management practices to reduce lead levels in the drinking water.

EPA's 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance can be found here: https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf

EPA's 3Ts

✓ **Training** schools officials to raise awareness of the effects and potential occurrence of lead in drinking water, assist school officials in identifying potential areas where elevated lead could occur, and establishing a testing plan to identify and prioritize testing sites.

✓ **Testing** drinking water in schools to identify any potential problems and take remedial action if necessary.

✓ **Telling students**, parents, staff, and the community about monitoring programs, potential risks, the results of testing, and remediation actions.

3Ts Links

- Introduction
- 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance
- 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities Toolkit
- Training, Testing, Telling (3Ts) Full Toolkit

Training

[1] Schools and child care facilities that are classified as their own public water systems (i.e. they are not served water, rather they have their own source, such as a well) are regulated by the New Jersey and Federal Safe Drinking Water Act rules. In addition, in New Jersey, all licensed child care facilities that are transient or non-public water systems must meet the same requirements as those non-transient non-community water systems.

The school community should be trained in the following areas:

- ✓ Health Effects of Lead: Lead is a toxic metal that is harmful to human health, especially children under the age of 6. The degree of harm from lead exposure depends on frequency, duration, dose of the exposure(s), and individual factors (age, nutrition, health history, etc.). Lead in drinking water can be a significant contributor to overall exposure to lead particularly for infants whose diet consists primarily of liquids.
- ✓ Sources of Lead: Lead is distributed in the environment from natural and man-made means. All sources contribute to the degree of harm. Sources of lead exposure include:
    - o Lead-based paint
    - o Lead in air from industrial emissions
    - o Lead in soil
    - o Lead in imported consumer products and food
    - o Lead in water
    - o
- ✓ How Lead Gets into Drinking Water: Lead is rarely found in the source water and enters tap water from the corrosion of plumbing materials. Facilities like schools with intermittent water use patterns may have elevated lead concentrations due to prolonged water contact with the plumbing.
- ✓ How Lead in Drinking Water is Regulated: Lead is regulated in public drinking water supplies for community and non-transient non-community water systems under the Safe Drinking Water Act (SDWA). *Schools that have drinking water supplied from a public water system are not subject to the SDWA monitoring and treatment requirements because those schools do not meet the definition of a public water system.*
- ✓ Planning Your Program and Establishing Partnerships: Responsibilities should be assigned to key individual(s) to ensure testing and follow-up actions are completed and school records should be reviewed to see if previous monitoring efforts have been made. Partnerships for additional assistance can be made with the public water supplier, local health department, New Jersey certified laboratories, and local community organizations and NJDEP.

Testing

Before a school moves forward with testing, the following should be completed:

- ✓ Step 1: Development of a Plumbing Profile for your Facility's Plumbing System: Target potential problems and assess factors that can contribute to lead contamination at your facility. Conduct a survey of the facilities plumbing in order to understand how the water enters and flows through the building, identify and prioritize sample sites, understand if lead is widespread or localized within the building, and plan remedial actions, if necessary. Some questions that can be asked during the assessment include:
    - o When was the original building constructed? Were any buildings or additions added?
    - o If built or repaired since 1986, were lead-free plumbing and solder used?
    - o When were the most recent plumbing repairs made?
    - o What is the material of the service connection?
    - o What is the material of the potable water pipes?
    - o Do you have tanks in plumbing system for storage or pressure?
    - o Was lead solder used in your plumbing system? (note locations)
    - o Are brass fittings, faucets, or valves used in your drinking water systems?
    - o Are the drinking water fountains lead lined in your drinking water system?
    - o Do outlets that provide drinking water have accessible screens or aerators? Have the screens been cleaned?
    - o Check building files to see if any water samples have been taking from your building for any contaminants. (Can check with public water supplier)

- ✓ Step 2: Create the Sampling Plan: A designated school employee(s) should be designated to be responsible for the sampling program. If a laboratory is hired to conduct testing, you should ensure they are certified for lead analysis in drinking water and have experience in conducting lead testing at schools.
- ✓ Step 3: Determine Sampling Locations: Sampling sites must be prioritized based on responses to the plumbing profile and your knowledge of the facility. At a minimum, every outlet that is regularly used for cooking and drinking should be sampled. It may be helpful to create a map identifying each sample site. Sample sites that are most likely to have lead contamination include:
    - o Areas containing lead pipes or lead solder

- Areas of recent construction and repair in which lead materials were used
- Areas where the plumbing is used to ground electrical circuits
- Areas of low flow and/or infrequent use
- Areas containing brass fittings and fixtures

✓ Step 4: Collect the Samples and Selecting a Lab for Analysis: To avoid sampling errors, have an adequately trained individual collect samples. A NJ certified laboratory should conduct the analysis. For a list of NJ certified labs click here or call the NJDEP Office of Quality Assurance at 609-292-3950.

- NJDEP strongly recommends that all parties involved (i.e. school's project manager, laboratory manager, etc.) develop and sign a Quality Assurance Project Plan (QAPP) for the lead sampling and analysis.
  Collection Procedures: The certified drinking water lab that you select will either collect the samples for you or they will provide you with materials and instructions if you plan to collect samples on your own. All samples must be collected in a certified pre-cleaned HDPE 250mL wide-mouth single use rigid sample containers.

  - Initial Sampling: Samples should be taken from prioritized outlets in the school.
  - Follow-Up Flush Sampling: If initial sampling for an outlet reveals lead concentrations greater than 15 ppb in a 250 mL, follow-up flush testing is recommended to determine if the lead is from the fixture or interior plumbing.

  Common Sampling Mistakes:

  DO….
  - Use a 250 ml bottle for sample collection
  - Label bottles accurately.
  - Start sampling at the outlet closest to the point of entry.

  DO NOT….
  - Remove aerators.
  - Sample at a location where water has sat for longer than 18 hours.
  - Sample at a location where the water has been run in the last 8 hours.
  - Sample at combined hot/cold outlet without first shutting off the hot water.
  - Flush the tap for a first draw sample.
  - Forget to sample ice machines.

✓ Step 5: Take Remedial Action: Both short-term and permanent solutions should be implemented.

  - Short-term measures like providing bottled water and shutting off problem outlets, can be taken immediately while you wait for test results or while permanent solutions are being developed.

  - Long-term remedial action, like plumbing replacement or treatment installation, requires planning and may take longer to put in place.

    - Develop a plumbing replacement program to replace lead containing components replaced with lead-free materials. Lead-free is defined as not more than a weighted average of 0.25% lead with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and plumbing fixtures. Click here for information on lead free products.
    - Install lead removal systems that are NSF certified for lead removal. Click Here to search for NSF certified drinking water treatment units.

  In the interim, while remedial actions are being determined, routine control measures may also be taken to prevent elevated lead levels:

- Develop a flushing program and/or install automatic flushers for taps used for drinking water and/or food preparation.
- Use only cold water for food and beverage preparation.
- Developing an aerator (screen) cleaning maintenance schedule and clean debris from all aerators on a routine basis.

Telling

NJDEP recommends that schools conducting a lead in drinking water sampling program make sampling results and other public education materials available to parents, teachers, students, and employee organizations.

- ✓ Public Education: Any of the public notification methods noted below can be used alone or in combination to communicate with your stakeholders. At a minimum, letter/fliers to parents/guardians and other members of the school community should be conducted. Other communication methods may include:
  - Press release in local newspaper
  - Mailbox or paycheck stuffers
  - Staff newsletter
  - Presentations
  - Email and websites
  - Posting on bulletin boards

- ✓ Components of an Effective General Communication Strategy: Lead in drinking water is a sensitive and ongoing issue, current information should be provided to the school community. All relevant stakeholders including but not limited to school employees, students, parents, building community, local health community, larger community, NJDEP, and the drinking water community should be included
  .
- ✓ Timing: At a minimum, stakeholders should be notified:
  - Prior to the start of a lead water sampling program
  - In response to expressed interest
  - After obtaining results of testing and if you decided on remedial action, if needed

- ✓ Content: Communication material should include information on the details of the:
  - Lead sampling program details
  - Results of sampling program and plans for corrective actions of any identified problems
  - Public health effects and risks posed by lead in drinking water
  - Availability of general lead in drinking water information
  - Locations where blood-lead level testing is available and recommendation to consult with a physician for further assistance

  - Ways families can increase awareness of lead in the home

Other Useful Links:

- Department of Health: Drinking Water Facts: Lead
- Environmental Protection Agency Lead in Drinking Water at Schools and Child Care Facilities
  - 3Ts for Reducing Lead in Drinking Water in Schools
    - Introduction
    - 3Ts for Reducing Lead in Drinking Water in Schools: Revised Technical Guidance
    - 3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities Toolkit
    - Training, Testing, Telling (3Ts) Full Toolkit

    - Drinking Water Best Management Practices For Schools and Child Care Facilities Served by Municipal Water Systems

- How to Identify Lead-Free Certification Marks for Drinking Water System & Plumbing Materials
- Water System Sampling Results
  Most water systems test for lead as a regular part of water monitoring. These tests give a system-wide picture and do not reflect conditions at a specific drinking water outlet]

    - NJ public water systems sampling results may be found at NJ Drinking Water Watch.
    - You may also request a Consumer Confidence Report (CCR) from your water supplier
    - If you are uncertain who you water supplier is, look it up here.