Module 6: Remediation and Establishing Routine Practices

Remediation Options

Communication Plan: Share your plans to remediate if elevated lead is found. This may include short-term or permanent measures.

Solutions to lead problems typically should be addressed on both a short-term and a long-term basis. Measures can be taken while you wait for your test results or until a permanent solution has been put in place. It is helpful to become familiar with potential remediation options before sampling has occurred. You should work closely with maintenance staff and plumbers who may make repairs to ensure that the chosen remediation options will remove lead from the water and to understand the benefits and considerations associated with each option. It is also important to ensure that your school and/or child care facility population are familiar with the use of new fixtures or technology that may be installed.

When selecting a remediation provider, engage the local health department, public water system, and other available resources to ensure the organization performing remediation is qualified and reputable. Ask vendors for information on the schedule, health precautions that must be taken during and following remediation, and request regular status updates on their progress prior to agreeing to work with any particular organization. The internal team should identify an individual that is responsible for working with the remediation contractors. This person should regularly communicate the schedule, activities, and hazards to the 3Ts Program team.

Immediate Response

Below are some immediate actions to consider following the receipt of results indicating elevated lead in drinking water.

Shut Off Problem Outlets

If initial sample results from an outlet exceed the remediation level, the outlet can be shut off or disconnected until the problem is resolved. Shutting off problem outlets can also provide a permanent solution. If the outlet is not used regularly, this may be a viable option; however, if the outlet is frequently used, this is probably not a practical long-term solution.

Share Test Results

Post test results in your facility (i.e., in the administrative offices), and on a public website. Notify staff, parents, and students of test results and actions you are taking. Also, reach out to the public water system to share results and discuss potential remediation measures.

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Post "Not for Drinking/Cooking" at Problem Outlets

If initial sample results from an outlet exceed the remediation trigger level, but the problem outlet is routinely used for purposes other than human ingestion (e.g., hand-washing), clear signage can be posted to notify people that the outlet is not to be used for drinking or cooking until the problem is resolved.

Increase Awareness and Public Education

Take the initiative in providing information to your community. Be a good and reliable source of information on your program for reducing lead in drinking water. Be positive, proactive, and forthcoming when working with the media, members of the community, parents, students, and staff.

Short-Term Control Measures

Below are short-term measures facilities can take as they consider long-term or permanent control measures. You should consider the pros and cons of each before choosing what steps are most appropriate. As you implement short-term measures, you should also consider the benefit of remediation that removes the risk of lead contamination (noted in the Permanent Control Measures section).

Provide Filters at Problem Taps

Point-of-use (POU) units are commercially available and can be effective in removing lead. There are a number of POU cartridge filter units on the market that effectively remove lead They can be relatively inexpensive ($65 to $250) or more expensive ($250 to $500), their effectiveness varies, and they may be vulnerable to vandalism. Filters need routine maintenance (e.g., cartridge filter units need to be replaced periodically) to remain effective.

To select a lead-reducing POU filter, check with the manufacturer or a third-party website (such as nsf.org or wqa.org) to verify the product was tested and certified against NSF/ANSI Standard 53 (for lead removal). For additional protection for particulate lead, look for a POU filter that is also certified against NSF/ANSI Standard 42 (for class I particulate reduction, 0.5 µm to <1 µm).

POE vs POU: Point-of-entry (POE) and POU devices are different types of treatment options. A POU is installed at each outlet, while a POE is installed where the water enters the building. If you are considering installing a device to treat water entering your building, you should first consult with your state drinking water office. Installation of a POE device could lead to your facility being identified as a public water system under SDWA, and your facility could be required to meet the federal and state regulations for drinking water, including additional water quality monitoring. In addition, POE devices are not effective in remove lead that comes from plumbing materials within the school or child care facility.

Flush Taps Prior to Use

Flushing individual problem water outlets or all outlets within the school or child care facility may also represent a short-term solution. However, unless you can ensure lead levels remain low throughout the day, flushing just once a day or once a week is not recommended. If follow-up flush samples indicated no or low lead levels, facilities could use signage that notifies staff and students to flush for 30 seconds prior to each use. It is important to create schedules and ensure implementation of these practices until permanent control measures have been completed. See the Flushing Best Practices factsheet for additional information on outlet flushing instructions.

Provide Bottled Water

This can be an expensive alternative but might be warranted if you are aware of widespread contamination and other remediation is not a near-term option. If you use bottled water, be aware that it is not regulated by EPA but rather by the Food and Drug Administration (FDA). States may also regulate bottled water, and in some instances, these standards may be more stringent than the federal requirements. EPA recommends that you request a written statement from the bottled water distributor guaranteeing that the bottled water meets FDA and state standards. A copy of this letter should be recorded.

Permanent Control Measures

You can take a number of actions to permanently reduce or eliminate the sources of lead that originate in building plumbing. After obtaining an understanding of the water supply and the lead conditions in their facilities through testing, you should examine the permanent remediation options and select those most appropriate to their situation. The decision will be based on such factors as cost, likelihood of success, availability of water, and staffing requirements.

Replacement of Problem Outlets

After identifying the sources of lead contamination, replacing these identified outlets and any identified upstream plumbing components (e.g., valves, leaded solder) permanently address the problem, compared with other solutions that have long-term costs and risks. If the sources of lead contamination are localized and limited to a few outlets, replacement may also be the most cost-effective option in the short-term. EPA's revised March 2015 guidance, How to Identify Lead-Free Certification Marks for Drinking Water System & Plumbing Products, can be a useful resource selecting lead-free plumbing. Follow-up testing is also recommended, as with the other remedies, to ensure that the efforts result in reduced lead levels at the fixture outlets.

> Helpful Tip...
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> If multiple replacements of one type of component (for example, fountain valves) are needed, you may wish to purchase only one or two initially. Take follow-up water samples after installing the new component(s) to verify that lead levels are reduced to acceptable levels. If follow-up testing is satisfactory, you can be reasonably certain that the product would perform well at other locations in your facilities.

Pipe Replacement

Lead pipes within your property and portions of a lead service lines under your and/or public water system's jurisdiction can be replaced. Contact the public water system regarding jurisdiction. You may be responsible for replacing the portion of a lead service line that is on school or childcare property, rather than under the jurisdiction of the public water system.

Provide Filters at Problem Taps

Some facilities may also choose to use certified lead-reducing filters, also called Point of use (POU) units as a long-term or permanent control measure. When doing this, facilities should be sure to create maintenance schedules and identify a point of contact to be in charge of making sure they are properly maintained.

Helpful Tip…

Flushing can be a tool after remediation. In addition to replacing or removing lead containing plumbing or fixtures flushing can help clear out debris or lead particulates that may be released when remediation occurs.

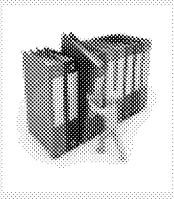
Reconfigure Plumbing

Ongoing renovation of school or childcare buildings may provide an opportunity to modify the plumbing system to redirect water supplied for drinking or cooking to bypass sources of lead contamination. Before undertaking such an alternative, be certain that you have properly identified all of the sources of lead contamination in drinking water. Follow-up testing is also necessary, to ensure that the efforts result in reduced lead levels at the drinking water outlets.

Considerations for Replacement Activities

When making any repairs, ensure that "lead-free" materials are used. Make sure that any plumber who does repair or replacement work on the facility's plumbing system uses only "lead-free" solders and other materials. The 1986 Safe Drinking Water Act Amendments and the 2011 Reduction of Lead in Drinking Water Act require that only "lead-free" materials be used in new plumbing and plumbing repairs. Make sure all plumbers and other workers adhere to these requirements. These actions will prevent or minimize new lead from being introduced into the facility's plumbing system. Report any violations of the "lead-free" requirements to the local plumbing inspector, the state drinking water program or EPA.

Electrical current may accelerate the corrosion of lead in piping materials, so also consider checking grounding wires. Existing wires already grounded to the water pipes can in some cases be removed by a qualified electrician and replaced by an alternative grounding system. If local or state building codes allow, consider finding an alternative grounding system and having a qualified electrician make the change. Be aware that the removal of grounding from water pipes may create a shock hazard unless an acceptable, alternative ground is provided.

Don't forget to maintain a record!

Record remediation efforts, schedules for upkeep and maintenance, and partners and contacts that assisted in your efforts.