

WATER QUALITY REPORT

FOR 2011

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

WATER QUALITY REPORT

FOR 2011

TOWN OF SHARON

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OFFICIAL NOTICE
Department of Public Works
Town of Sharon



To Our Customers

Over the past several years, I have heard first-hand from customers that they value and appreciate this annual update. Consequently, I am pleased to present you with this year's Annual Water Quality Report, providing you with information on where your water comes from, what we are doing to modernize our system, what is found in the water, what we do to ensure high-quality water for now and in the future, and tips on efficient use of water.

Providing high-quality drinking water for public health is the single most important aspect of our work. The Sharon Water Department (Public Water Supply No. 4266000) recognizes that our operations are integrally connected to broader water resource management interests. As a result, a significant component of this effort is protection of the natural resources that contribute to your water supply. Most Town residents remain unaware that the Water Department is the sixth largest individual landowner in the Town behind only the Conservation Commission, the Massachusetts Audubon Society, the State and Town and Trustees of Reservations. The Water Department is in the process of attempting to obtain additional property in the immediate vicinity of Well #6 off Wolomolopoag Street and off Richards Avenue in conjunction with the Sharon Conservation Commission for future water supply protection.

The present mandatory summertime outdoor water use restrictions in place to comply with State residential water use restrictions, aggressive leak detection and repair and the appliance rebate program have together reduced residential consumption significantly over the past few years. For those of you making wise water choices a priority, we thank you for your efforts, and for those of you not yet practicing water conservation, now is a great time to start.

In addition, as your water supplier, we continue to be called upon to identify and reduce excessive water use. The Town of Sharon Water Department has long been an advocate of wise water use and continues to provide outreach and incentives through coordination with the Neponset River Watershed Association in order to further our education outreach with Sharon schools and other public groups.

As many of you know, the Water Department has continued our aggressive program of replacing century old cast iron and break prone asbestos-cement water mains. We understand the frustration resulting from traffic delays and rough pavement that many have experienced and thank you for your continued patience.

I hope you take the opportunity to read through the information on the following pages. As always, we appreciate your feedback and input, so please contact us if you have any questions or comments regarding this Report of our water system.

Respectfully,

Eric R. Hooper, P.E.
Superintendent of Public Works
Town of Sharon

2011 PROJECT HIGHLIGHTS

Replacement of the asbestos-cement water main under Massapoag Avenue has continued with the section between the Community Center and Morse Street completed in 2010 and the section between Morse Street and Lakeview completed in 2011. The section between Lakeview Street and the access road to the Massapoag Avenue Storage Tank is scheduled to be completed during the summer of 2012.

Also completed during 2011 was the replacement of the 1890's vintage cast iron water main under Pond Street between Billings Street and the Pond Street rotary.

Several significant leaks were repaired during the course of 2011, including house service leaks measured to be on the order of 30 gallons per minute and broken water main leaks under Billings Street and Massapoag Avenue and service house leaks under Manomet and Pheasant Wood.

House service meters are now all radio read type allowing the Water Department to more easily identify in-house leaks and other water use anomalies.

SHARON'S WATER SYSTEM

Our water system includes six groundwater supply wells and pump-ing stations, four water storage tanks, and approximately 115 miles of water main. Our groundwater sources are of good quality and require minimal treatment. Our water is disinfected and treated for corrosion control to reduce the amounts of lead and copper in our water. Fluoride is added to our water to promote strong teeth and prevent tooth decay/cavities.

POTENTIAL SOURCES OF CONTAMINATION

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

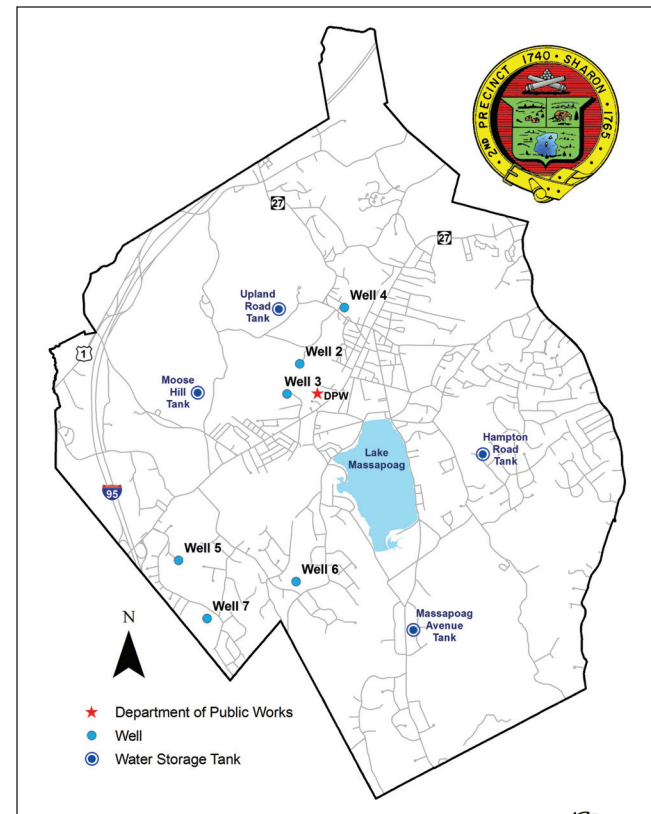
Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants can be naturally occurring or be the result of oil and gas production, and mining activities.

QUALITY CONTROL

To ensure that tap water is safe to drink, the Department and Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).



HELP TO PROTECT OUR WATER SUPPLY!

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for our water supply sources. The SWAP report assesses the susceptibility of public water supplies. A copy of the SWAP report is available at the Department of Public Works office. Our SWAP report has indicated that our groundwater is highly susceptible to contamination from residential activities adjacent to the wells; residential land uses; accidental spills from local roadways, Route 95 and the railroad; hazardous materials storage; existing contamination sites; and agricultural activities.

As a consumer, you have an impact on the quality of our water supply sources, and therefore, the quality of the water you drink. The land around our groundwater wells is mainly forested and residential with lesser amounts zoned as commercial. When rain falls or snow melts, the seemingly small amounts of chemicals and other pollutants around your property may be transferred by groundwater or overland flows to the wells.



IN THE SCHOOLS



The Neponset River Watershed Association's Water Conservation Coordinator, Nancy Fyler, has been busy visiting with students throughout the school district.

Elementary

Third graders in each elementary school were visited in the spring, and were taught about the town's water resources, infrastructure, personal usage, conservation, and pollution.

Middle School

The sixth grade spent class time learning about the effects that stormwater runoff has on water quality. The students learned about pervious vs. impervious surfaces, and discussed how trash, debris, and dog waste makes its way into our local water supply.

High School

At the high school level, two groups of students used their creative skills to communicate the importance of water conservation. Students in Ms. Janosko's Media Class produced public service announcements that were aired on Sharon Cable Television.

Students in Ms. Roberto's Graphic Design Class were "contracted" by the Water Conservation Program to produce posters promoting water conservation. Students had an opportunity to work with a "client", while learning various design and communication skills.

One of the Sharon High School water conservation posters submitted to the Boston Globe Scholastic Art Awards was recognized with a Gold Key (highest award), and two received Honorable Mentions.

Posters will be hung in municipal buildings throughout Sharon.



WATER EFFICIENCY

Sharon's water distribution system is self contained, with a groundwater source that is entirely dependent on rainfall. Water is not imported from any another source.



When we turn on our faucets, we expect to receive a reliable supply of high quality water without interruption or contamination. Increased demand inevitably puts stress on our water supply, environment, and infrastructure.

Being water efficient is the least expensive way to stretch our current supply to meet our needs, and to keep our Water Department costs down. It is also the simplest way to minimize environmental impact.



SCOOP THE POOP!

Dog waste that is not disposed of properly, is a major source of pollution for water quality and human health.

When animal waste ends up in water, it decomposes, releasing nutrients that cause excessive growth of algae and weeds, making the water murky, green, smelly, and unusable. Bacteria and viruses make water unswimmable and unfishable, and causes severe illness in humans.

To avoid contaminating our local water bodies:

- Carry a plastic bag with you on every walk with your dog and throw the waste into the nearest trash can.
- Never throw dog waste into a stormdrain! Everything that enters a stormdrain goes directly to local waters.
- Avoid letting your dog do his business within 200 feet of a water body.

SHARON WATER CONSERVATION PROGRAM

The Water Department continues to partner with the **Neponset River Watershed Association** and the **EPA WaterSense Program** to run the Sharon Water Conservation Program.

Educational programs in the schools, rebates, and town events have inspired many to become more water efficient, thereby saving money and energy, improving our ecosystem, and maintaining our water independence. For more information go to www.sharonwater.com

FIX A LEAK WEEK

In March, the **WaterSense “Fix a Leak Week” Program** reminded residents to check for water leaks around their homes. According to WaterSense, an American home wastes, on average, more than **10,000 gallons** of water every year due to running toilets, dripping faucets, and other household leaks.

To check for leaks, look at your **water meter** before and after a two-hour period when no water is being used. If the meter changes at all, you probably have a leak.



Analyze your water bill. You may have a leak if a family of four, with updated fixtures, exceeds **6,000 gallons per month**.

Toilets often leak, wasting up to **200 gallons a day!** To check for a leak, place a drop of food coloring in the toilet tank and wait a few minutes, without flushing. If any color shows up in the bowl, you have a leak. A common reason why toilets leak is because of a worn out toilet flapper, an inexpensive rubber part that build up minerals, or decays over time. Flappers can easily be replaced by a handyman or plumber.

Leaky showerheads can often be fixed by making sure there is a tight connection between the showerhead and the pipe stem, and by using **pipe tape or Teflon tape** to secure it.



RAIN BARRELS

In May, the Water Department continued its spring tradition of selling discounted rain barrels to Sharon residents.

Fifty-five rain barrels were sold on a first come, first served basis.

A rain barrel **collects rain water run-off** from a roof and stores it for use during dry weather. Harvested rainwater can be used to water plants or to wash lawn furniture, garden tools, and cars.

A one-inch rainfall on a 1,000 square foot roof yields **562 gallons** of water. Runoff from a **1/4 inch** of rain fall will easily fill a 60 gallon barrel.



GRASS SEED PROGRAM

In an effort to decrease the need for irrigation, residents are encouraged to upgrade their lawns with **drought tolerant fescue grass seed**.

In addition to being drought tolerant, fescue grasses are insect resistant and will survive in sunny or shady areas. They are easier to maintain than other grass types because they **require less water and fertilizer**. An added benefit is that fescues are slow growing grasses, so they require less frequent mowing.

Residents purchased 130 bags of specially mixed, discounted grass seed from the Water Department during the fall season.

REBATE PROGRAM

To encourage water efficiency in the home, the Water Department continues to offer generous residential rebates.

Replace a 3.5 gallon per flush (or higher) toilet with a WaterSense labeled model of **1.28 gpf or less**, and receive a rebate of half the cost of the toilet, up to **\$200**. Toilet must be installed by a licensed plumber and inspected by the Sharon plumbing inspector. Learn more about WaterSense toilets at: www.epa.gov/WaterSense/products/toilets.html



\$200 for installation of a clothes washers with an Energy Star water factor of **4.5 or less**. Look for washers at: www.energystar.gov



\$10 for a dual flush toilet conversion kit in a **1.6 gpf toilet**. Dual-flush conversion kits are recommended for use on modern 1.6 gpf toilets in good working condition. If you have an older 3.5 or higher gpf toilet, you will get superior flush power and greater water-savings by taking advantage of our toilet replacement rebate.



Free showerheads & faucet aerators are available at the Water Department during regular business hours: Mon.-Wed. 8am-5pm, Th. 8am-8pm, Fri. 8am-12:30pm

Rebate terms & conditions apply. Please call the Water Department at 781-784-1525, prior to purchase, to confirm rebate eligibility. More information can be found at www.sharonwater.com



DRINKING WATER AND PEOPLE WITH WEAKENED IMMUNE SYSTEMS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA’s Safe Drinking Water Hotline at 1-800-426-4791.

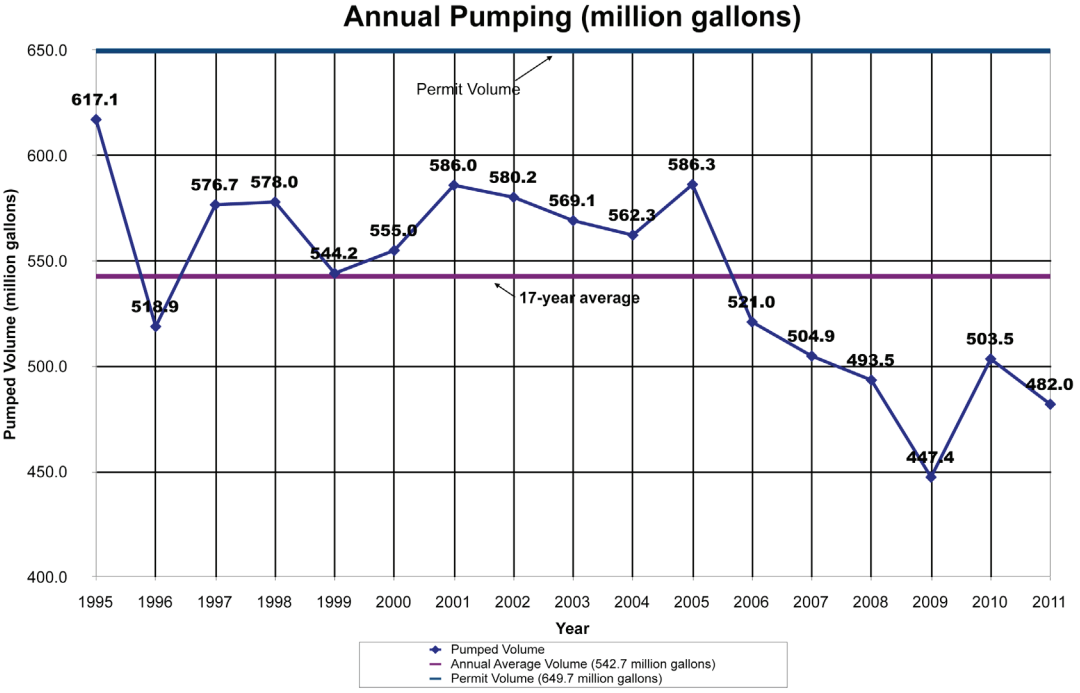
CROSS CONNECTIONS

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you’re going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem. The Sharon Water Department

recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and on the status of your water system’s cross connection program, please contact Eric Hooper at the Sharon Department of Public Works at 781-784-1525.

WATER USAGE

The Annual Pumping graph shows the total volume of water pumped from the Town’s six groundwater supply wells for each year from 1995 through 2011. The six wells are used to supply drinking water to meet the demands of the Town’s water customers. The Town is permitted by the State to pump no more than 650 million gallons of water each year. During the seventeen year period, the annual average volume of water pumped was 543 million gallons, approximately 100 million gallons below the permitted volume. From 1995 through 2000, the pumped volume fluctuated above and below the seventeen year average. However, since 2001, due in part to incrementally more restrictive outdoor water use regulations and diligent efforts by the Water Department to prevent or locate and repair leaks, the pumped volume has steadily declined from 586 million gallons in 2001 to 482 million gallons in 2011. The years 2005 and 2010 were exceptions due to significant leaks that proved difficult to locate using our acoustical leak detection equipment or were on private property.



WATER QUALITY SUMMARY Listed below are 15 contaminants detected in Sharon’s drinking water in 2010. Not listed are over 100 other contaminants for which we tested but did not detect. The complete list of contaminants that we test for is available at the Department of Public Works office and at the Sharon Public Library.

SAMPLES COLLECTED FROM OUR WATER SUPPLY

Substance (Contaminant)	Units	Highest Level Detected	Range of Detection	Highest Level Allowed <small>(EPA's MCLs)</small>	Ideal Goals <small>(EPA's MCLGs)</small>	Sources of Contaminant
PRIMARY CHEMICALS						
Fluoride ¹	ppm	1.20	0.85 - 1.20	4	4	Water additive which promotes strong teeth; Erosion of natural deposits
Nitrate	ppm	4.95	ND - 4.95	10	10	Runoff from fertilizer use; Leaching from septic tanks
Perchlorate ²	ppb	0.38	0.07 - 0.38	2.0	N/A	Oxygen additive in solid fuel propellant for rockets, missiles, and fireworks
SECONDARY CHEMICALS						
Sulfate ^{3,4}	ppm	15.4	ND - 15.4	NR	NR	Naturally present in the environment
UNREGULATED CHEMICALS						
Bromodichloromethane ⁵	ppb	5.1	ND - 5.1	NR	NR	By-product of drinking water chlorination
Bromoform ⁵	ppb	0.5	ND - 0.5	NR	NR	By-product of drinking water chlorination
Chloroform ⁵	ppb	17.8	ND - 17.8	NR	NR	By-product of drinking water chlorination
Chlorodibromomethane ⁵	ppb	1.1	0.6 - 1.1	NR	NR	By-product of drinking water chlorination
Sodium ^{5,6}	ppm	94.5	16.2 - 94.5	NR	NR	Naturally present in the environment
Turbidity ^{3,5,7}	NTU	1.0	ND - 1.0	NR	NR	Soil runoff; suspended material in water

SAMPLES COLLECTED FROM YOUR FAUCETS

Substance (Contaminant)	Units	Highest Running Annual Average	Range of Detection	Highest Level Allowed <small>(EPA's MCLs)</small>	Ideal Goals <small>(EPA's MCLGs)</small>	Sources of Contaminant
PRIMARY CHEMICALS						
Total Trihalomethanes	ppb	10.99	0.8 - 36.8	80	N/A	By-product of drinking water chlorination
Haloacetic Acids	ppb	2.73	ND - 9.5	60	N/A	By-product of drinking water chlorination
Chlorine	ppm	0.43	0 - 1.3	4 (MRDL)	4 (MRDLG)	Water additive used to control microbes
Copper ⁸ (4 samples exceeded the action level) VIOLATION	ppm	1.39	0.06 - 1.61	1.3	1.3	Corrosion of household plumbing systems
Lead ⁸ (1 sample exceeded the action level)	ppb	8.0	ND - 19	15	0	Corrosion of household plumbing systems

DEFINITIONS

- Maximum contaminant level goal (MCLG)** – The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- Maximum contaminant level (MCL)** – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Maximum Residual Disinfection Level (MRDL)** – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectants is necessary for control of microbial contaminants (ex. chlorine, chloramines, chlorine dioxide).
- Maximum Residual Disinfection Level Goal (MRDLG)** – The level of drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- Action Level** – The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirements that a water system must follow. The action level for lead and copper is the 90th percentile of all samples taken at one time.
- ppm** – One part per million; one part per million is equivalent to \$1 in \$1,000,000. **NR** – Not regulated.
- ppb** – One part per billion; one part per billion is equivalent to \$1 in \$1,000,000,000. **NTU** – Nephelometric turbidity units.
- ND** – Substance not detected in the sample.

Notes:

¹ Fluoride occurs naturally in all water supplies in trace amounts. Fluoride is added to the Sharon water supply to adjust the fluoride level to about one ppm so that it is optimal for better oral health. At this level, it is safe, odorless, colorless, and tasteless.

² Massachusetts has set a maximum contaminant level of 2.0 ppb for perchlorate.

³ The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. Samples for sulfate and turbidity were collected in December 2008.

⁴ Massachusetts has set a secondary maximum contaminant level of 250 ppm for sulfate. This level was established to protect the aesthetic quality of drinking water and is not health based.

⁵ Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulations are warranted.

⁶ The Massachusetts Office of Research and Standards has set a guideline concentration of 20 ppm for sodium.

⁷ Turbidity is a measure of cloudiness of the water. We monitor it because it is a good indicator of water quality.

⁸ Lead and copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of every 10 homes sampled. This number is compared to the action level for each contaminant. The 90th percentile for lead did not exceed the action level. The copper violation occurred when 4 samples and the 90th percentile value exceeded the action level in sampling collected in September 2011.

VIOLATION

Copper — In September 2011, the Town collected samples to test the lead and copper levels in household plumbing as required by the Massachusetts Department of Environmental Protection (DEP). The 90th percentile value for the copper samples was 1.39 ppm, which exceeds the copper action level of 1.3 ppm. The lead level was not exceeded. The Town has increased the pH of the water in the distribution system from 7.5 to 8.0 to help further reduce the corrosion of household copper piping. The Town increased the sampling rate for lead and copper from once every three years to semiannual to better monitor the Town’s corrosion control. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor.

LEAD If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Sharon Department of Public Works is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.