Lead in Drinking Water

Challenges for School Administrators

Roger Crouse
Manager
Maine CDC
Drinking Water Program

Educational Plant Maintenance Association
Maine Chapter
Summer Conference June 29, 2017

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Exposure to lead can have adverse health effects

Cardiovascular effects

Decreased kidney function

Increased blood pressure

Hypertension

Reproductive problems

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Children and pregnant women are most at risk

Behavior and learning problems

Lower IQ and hyperactivity

Hearing problems

Anemia

Slowed growth

Premature birth

Reduced growth of the fetus

The most common cause of childhood lead poisoning in Maine is dust from lead paint.

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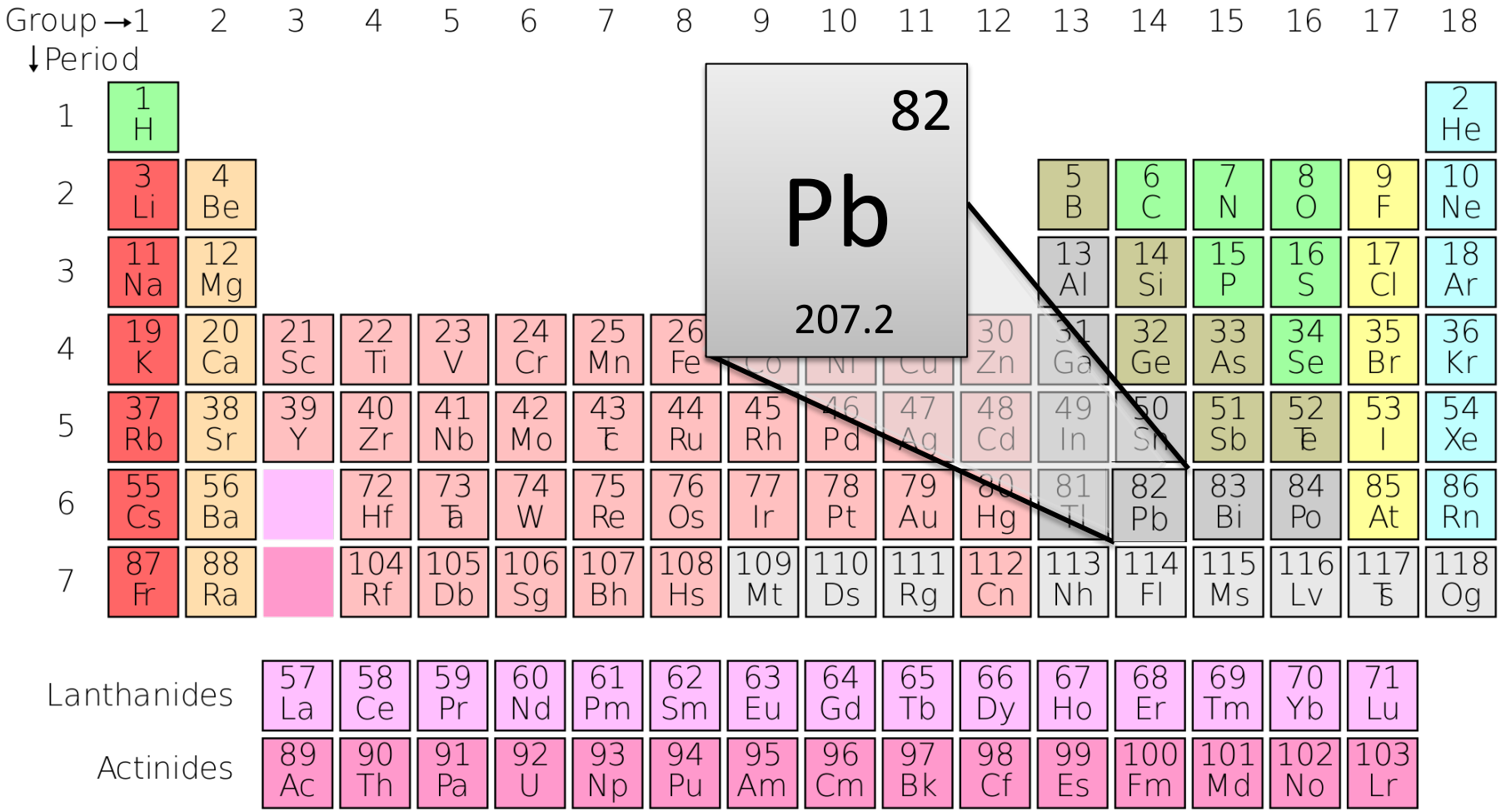
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19 K
20 Ca
21 Sc
22 Ti
23 V
24 Cr
25 Mn
26 Fe
30 Zn
31 Ga
32 Ge
33 As
34 Se
35 Br
36 Kr
37 Rb
38 Sr
39 Y
40 Zr
41 Nb
42 Mo
43 Tc
44 Ru
45 Rh
46 Pd
47 Ag
48 Cd
49 In
50 Sn
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53 I
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97 Bk
98 Cf
99 Es
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103 Lr
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Pb
207.2

Plumbum

Lead enters drinking water when it when it is contact with pipes, solder, fittings and fixtures containing lead

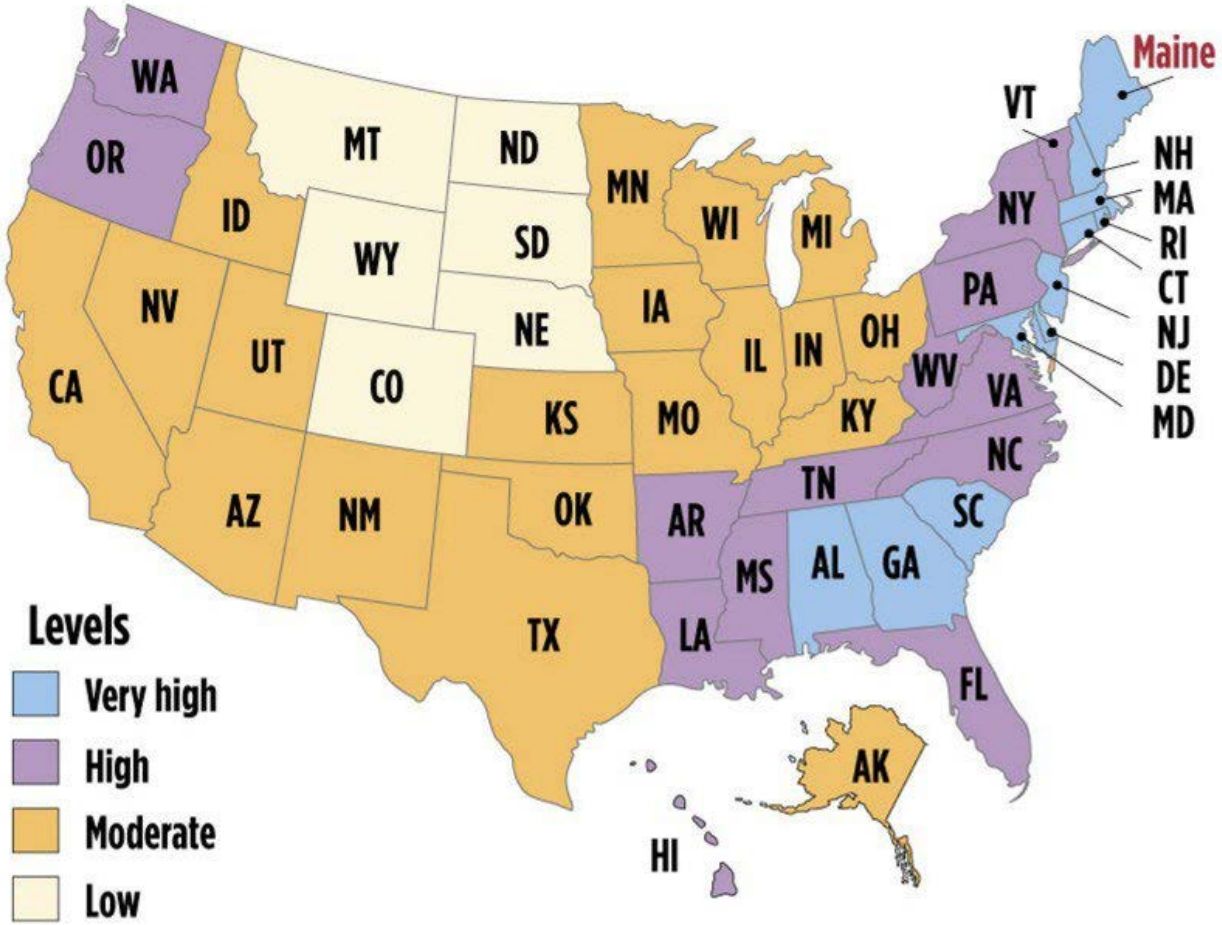
Water is the universal solvent

Lead will **leach** into the water when:

- The water is **stagnant**
- **pH** is **low**
- **Alkalinity** is **low**
- **Temperature** is **high**
- **Changes** in water **chemistry**

Corrosive groundwater in the U.S.

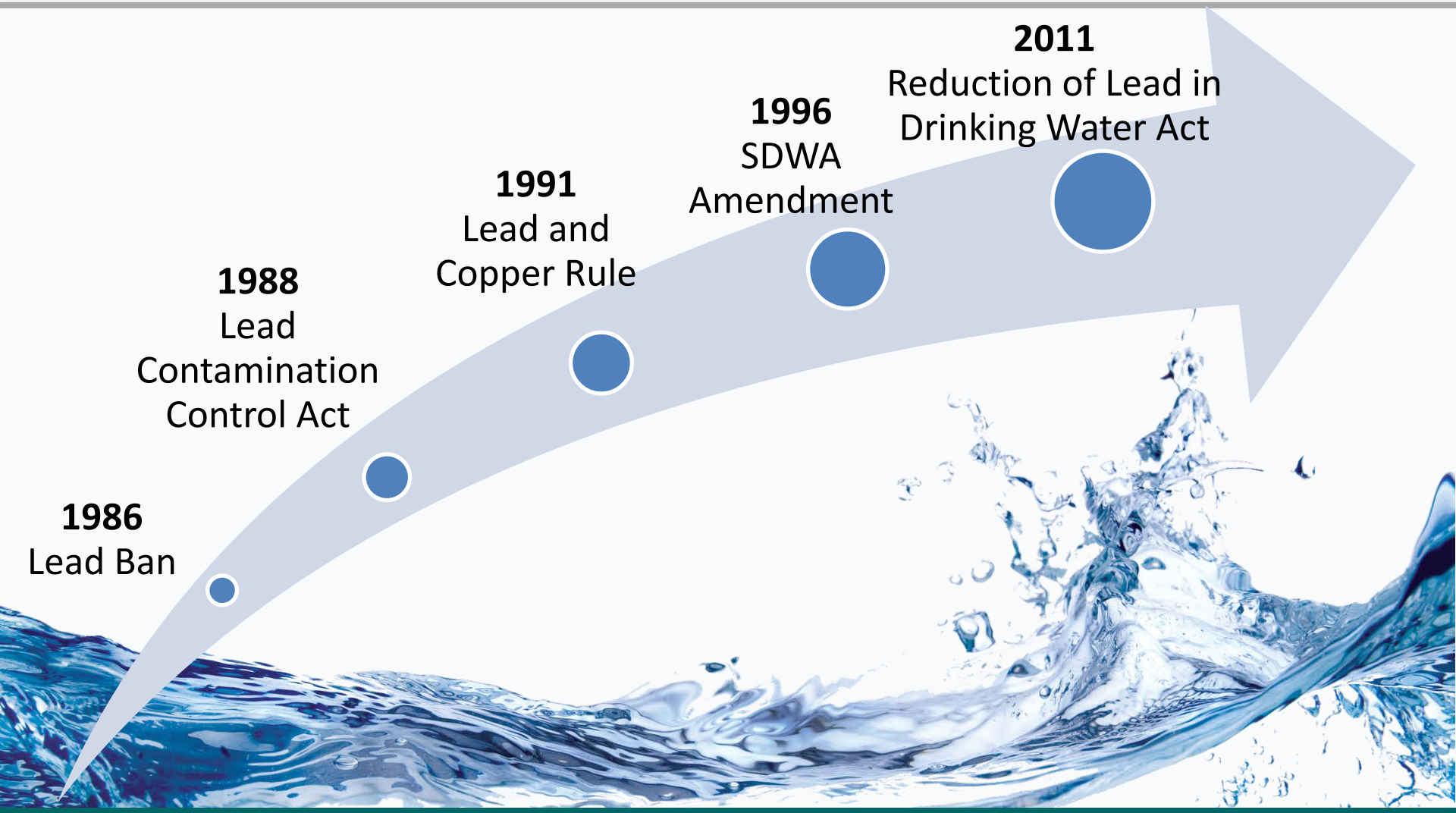
Maine is one of 11 states with very high levels of water corrosive enough to leach lead out of older plumbing systems.



SOURCE: United States Geological Survey (USGS)

STAFF GRAPHIC | MICHAEL FISHER

Lead has been regulated in drinking water since 1986



1986 Lead Ban

1988
Lead Contamination Control Act

1991
Lead and Copper Rule

1996
SDWA Amendment

2011
Reduction of Lead in Drinking Water Act

1986 Lead Ban

- **Solder & Flux ≤ 0.2% lead**
- **PWS pipes & internal plumbing ≤ 8% lead**

1988 Lead Contamination Act

1986
Lead Ban

1988 Lead Contamination Control Act

1991
Lead and Copper Rule

1996
SDWA Amendment

2011
Reduction of Lead in Drinking Water Act

- **ID & reduce lead in drinking water in schools and day cares**
- **Non-enforceable**

1991 Lead and Copper Rule

1986
Lead Ban

1988
Lead Contamination Control Act

1991 Lead and Copper Rule

1996
SDWA Amendment

2011
Reduction of Lead in Drinking Water Act

- **PWSs must evaluate & reduce the corrosiveness of the water**

1996 Safe Drinking Water Amendment

1986
Lead Ban

1988
Lead Contamination Control Act

1991
Lead and Copper Rule

1996 SDWA Amendment

2011
Reduction of Lead in Drinking Water Act

- **Fittings & Fixtures ≤ 8% lead ("lead free")**

2011 Reduction of Lead in Drinking Water Act

1986
Lead Ban

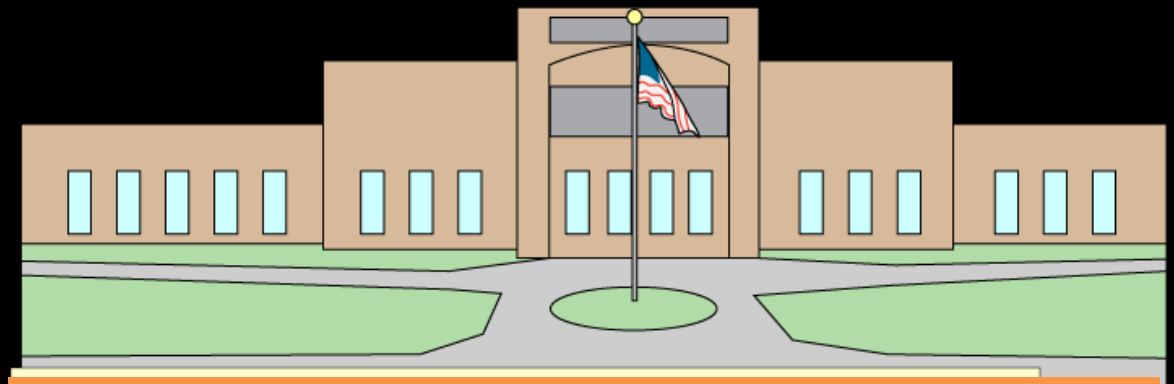
1988
Lead Contamination Control Act

1991
Lead and Copper Rule

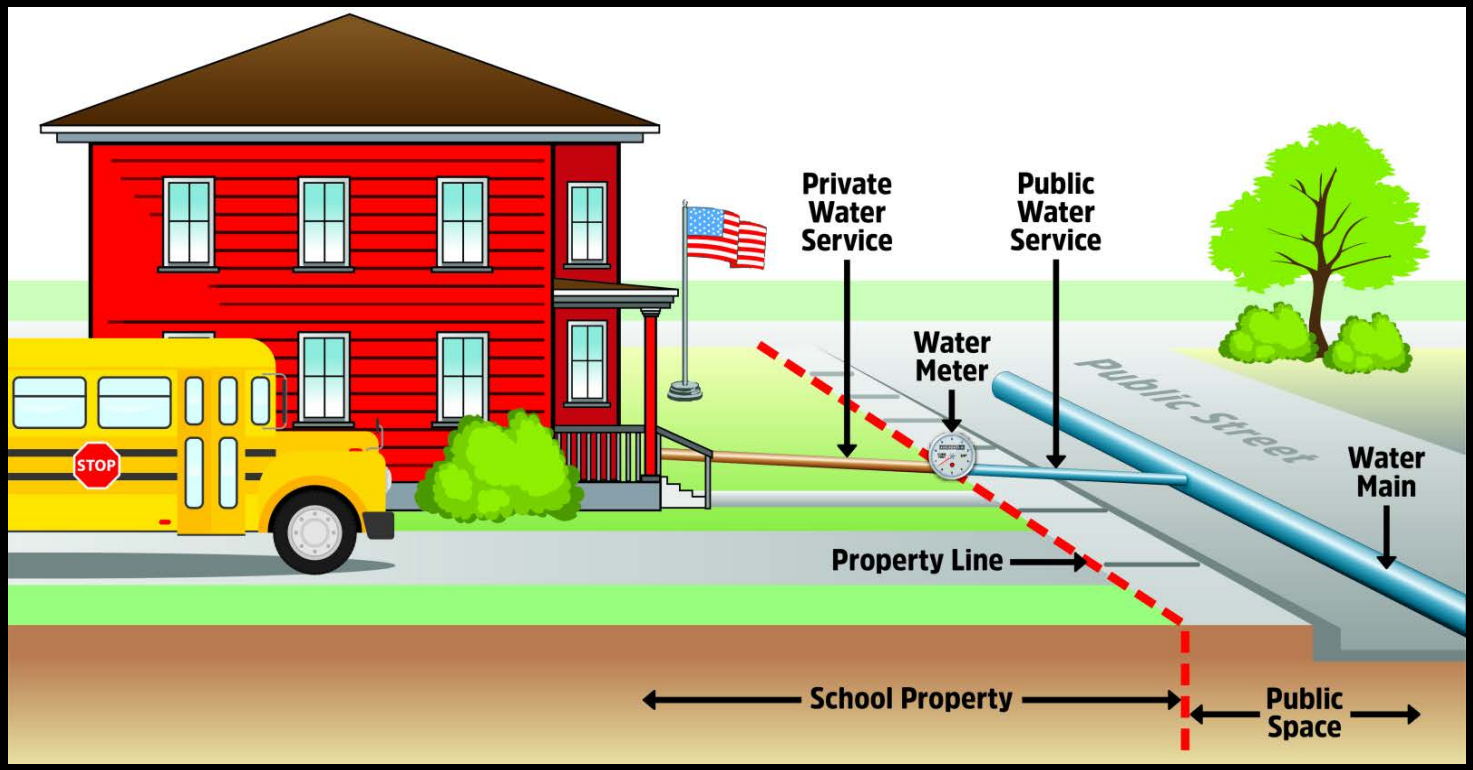
1996
SDWA Amendment

2011
Reduction of Lead in Drinking Water Act

- **"Lead free" defined as ≤ 0.25% lead**



Non-Transient, Non-Community Water System (NTNC)



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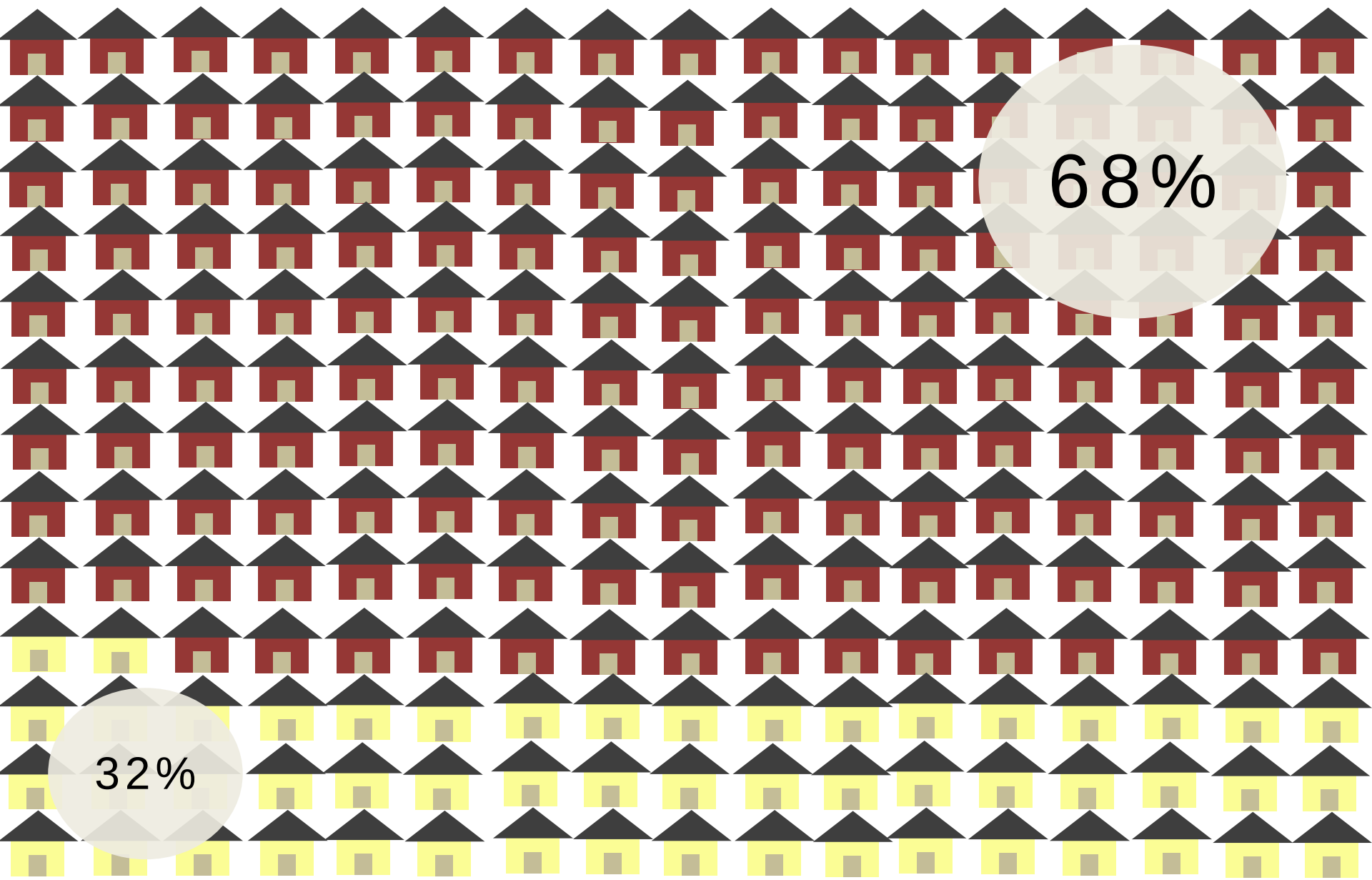
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32%

FEBRUARY 1, 2016
TIME
The Poisoning Of An American City
Toxic water. Sick kids. And the incompetent leaders who betrayed Flint
By Josh Sanburn
time.com

USA TODAY

LEAD IN YOUR WATER

A USA TODAY NETWORK INVESTIGATION

LEAD EXPOSURE IN SCHOOLS, DAYCARES

Number of times water supplied to schools and daycares tested for high levels of lead between 2012-2015.

0 1-5 6-10 11-20 21+

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EDITORIALS Posted December 13, 2016 INCREASE FONT SIZE

Our View: Now is the time for all Maine schools to test their water

Mandating that buildings using municipal systems undergo checks may be the only way to ensure students' safety.

BY THE EDITORIAL BOARD

Share Comment

About 350 Maine schools have not been tested for lead in their water supply, and if you are an administrator, school board member or parent at one of them, you should be asking why.

A Lewiston lawmaker is propos it shouldn't have to be. Clean w schools, where young, growing chemicals.

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The Ellsworth American.

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High lead levels detected in Dedham Elementary water

April 25, 2016 by Taylor Bigler on Education, News

DEDHAM — With the Flint, officials are taking no chance School.

"We are not taking any chanc

Portland Press Herald What are you looking for?

NEWS Posted October 19, 2016 | Updated October 19, 2016 INCREASE

State investigates high lead levels in central Maine school's water

Drinking fountains are turned off at Benton Elementary School after tests show lea much as 40 times the federal standard.

BY MADELINE ST. AMOUR MORNING SENTINEL Follow:

NEWS Posted March 18, 2016 | Updated March 19, 2016

Report shows dozens of Maine schools have water with elevated lead levels

The state led the nation with 44 samples exceeding EPA limits, likely caused by rural schoo wells, the age of schools and corrosive groundwater in some regions.

BDN MAINE Bangor

TODAY 72° 49° WEDNESD CURRENTLY: 47°

Tuesday, May 23, 2017 Last update: 8:47 a.m.

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Four drinking fountains at Bangor schools shut down for elevated lead levels

Portland Press Herald What are you looking for? LOG IN

SCHOOLS & EDUCATION Posted December 11, 2016 | Updated December 11, 2016 INCREASE FONT SIZE

Do you know if your public school has tested its water for lead?

Not all Maine districts are required to check lead levels and there's no database indicating which have done so, what they found or what corrective actions were taken.

BY NOEL K. GALLAGHER STAFF WRITER

SCHOOLS & EDUCATION Posted September 1, 2016 | Updated September 2, 2016

Excess lead in Yarmouth schools' water sparks call for testing at all schools

A health advocate notes that many Maine school districts are not required to monitor for lead, as

LOCAL & STATE Posted April 14 | Updated April 15 INCREASE FONT SIZE

Student's project turned up elevated lead levels in Boothbay schools

The district has warned students and staff not to drink or cook with the water, first found to have high lead levels in testing March 30.

BY JOE LAWLOR STAFF WRITER

Share 16 Comments

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SCHOOLS & EDUCATION Posted February 15 | Updated February 16 INCREASE FONT SIZE

Legislator wants lead tests for drinking water at all Maine public schools

Even the buildings and day care facilities with municipal supplies would have to do checks at the tap and make the results public through the state.

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LOCAL & STATE Posted December 5, 2016 | Updated December 5, 2016

INCREASE FONT SIZE

Maine's public water utilities partner with state to fund lead testing at schools

Public water utilities can now conduct 10 free tests for each school they serve in an effort to ensure Maine children have clean drinking water.

BY MADELINE ST. AMOUR STAFF WRITER

Share Comment

Kennebec Water District General Manager Jeff LaCasse, who is also chairman of the Maine Public Drinking Water Commission, said a new statewide program for testing the water of Maine schools came about because "the requirement wasn't there for testing in schools that were served by public utilities." *Staff file photo by David Leaming*

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Recommended Protocol for Testing Your School for Lead in Drinking Water

Maine CDC Drinking Water Program • 11 SHS Augusta, ME 04330 • 287-2070 • www.medwp.com

Overview

Even though your public water utility may deliver water that meets all federal

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Lead in School Drinking Water

Information for Parents and Guardians

ng water outlets for lead is so
nsumption, such as a drinking

Maine CDC Childhood Lead Poisoning Prevent

Can lead in school drinking

How drinking water with lead in it may affect
child drinks, how long they have been drinkir
depend on whether or not your child is expo
to lead is through dust from lead paint foun

With lead, we are most concerned about c

- A young child's brain is still growin

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Testing Your School for Lead in Drinking Water: Post-Sampling Guidance

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Receiving Sample Result Reports

The laboratory

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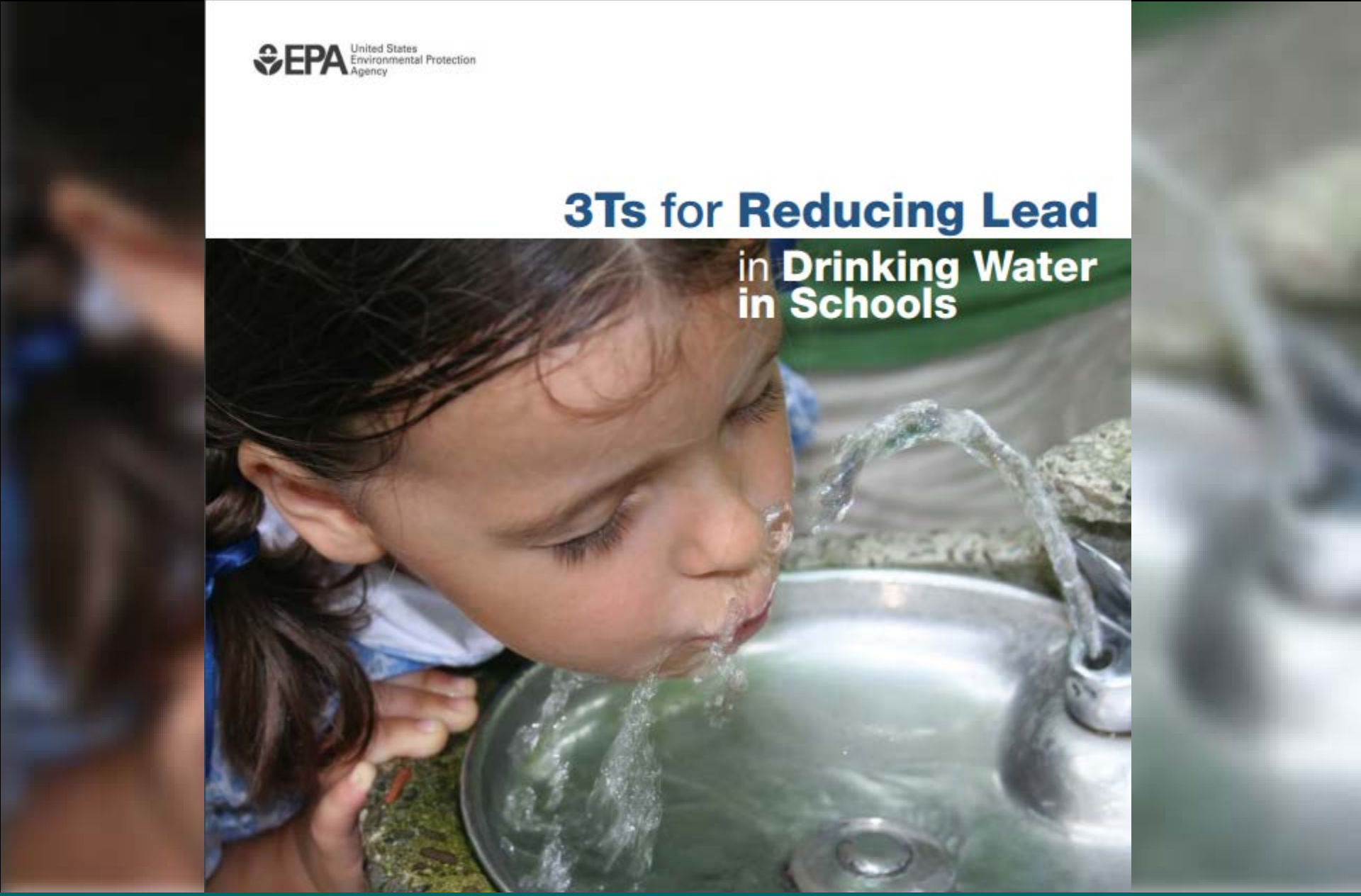

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Lead in Drinking Water

Maine's public drinking water systems use wells, springs, lakes, and rivers to provide clean, lead-free drinking water. Homes, schools, and businesses that do not get water from a public water system usually get their water from wells. Water coming into a home, school, or business is usually free from lead. In most cases, if there is lead in drinking water it comes from the pipes and plumbing inside a home or building. While lead is not naturally found in water, it can dissolve into water from plumbing fixtures and piping that contain lead, such as brass faucets and lead solder.

Having lead in the body can cause health problems. With lead we are most concerned about children under the age of 6 years old. That's because a young child's brain is still growing and is more easily harmed by lead. In young children, lead can cause learning disabilities and behavior problems. For older children and adults, lead can cause kidney disease, memory problems, and high blood pressure.

You cannot see, taste, or smell lead in drinking water. A water sample needs to be analyzed by a certified laboratory in order to determine if your water contains lead.

Testing for Lead in Schools

The deadline for schools to request free lead in water test kits is approaching. All samples must be returned to the State's Health and Environmental Testing Laboratory (HETL) for analysis by May 31, 2017. Please see the information posted on the links below for details about this offer. If you have questions about ordering kits, please contact HETL at (207) 287-1716.

The Maine Drinking Water Program joins the Maine Rural Water Association, Maine Water Utilities Association, and the Maine Public Drinking Water Commission in encouraging water utilities to work with schools in testing school drinking water for the presence of lead. Additional pages of this website offer resources intended to promote awareness of the issue of lead in drinking water, including information for:

Water Utilities

Schools and Parents

Lead should be at or below acceptable levels

EPA guidance for **schools and daycares** is levels of **20 ppb** (parts per billion).

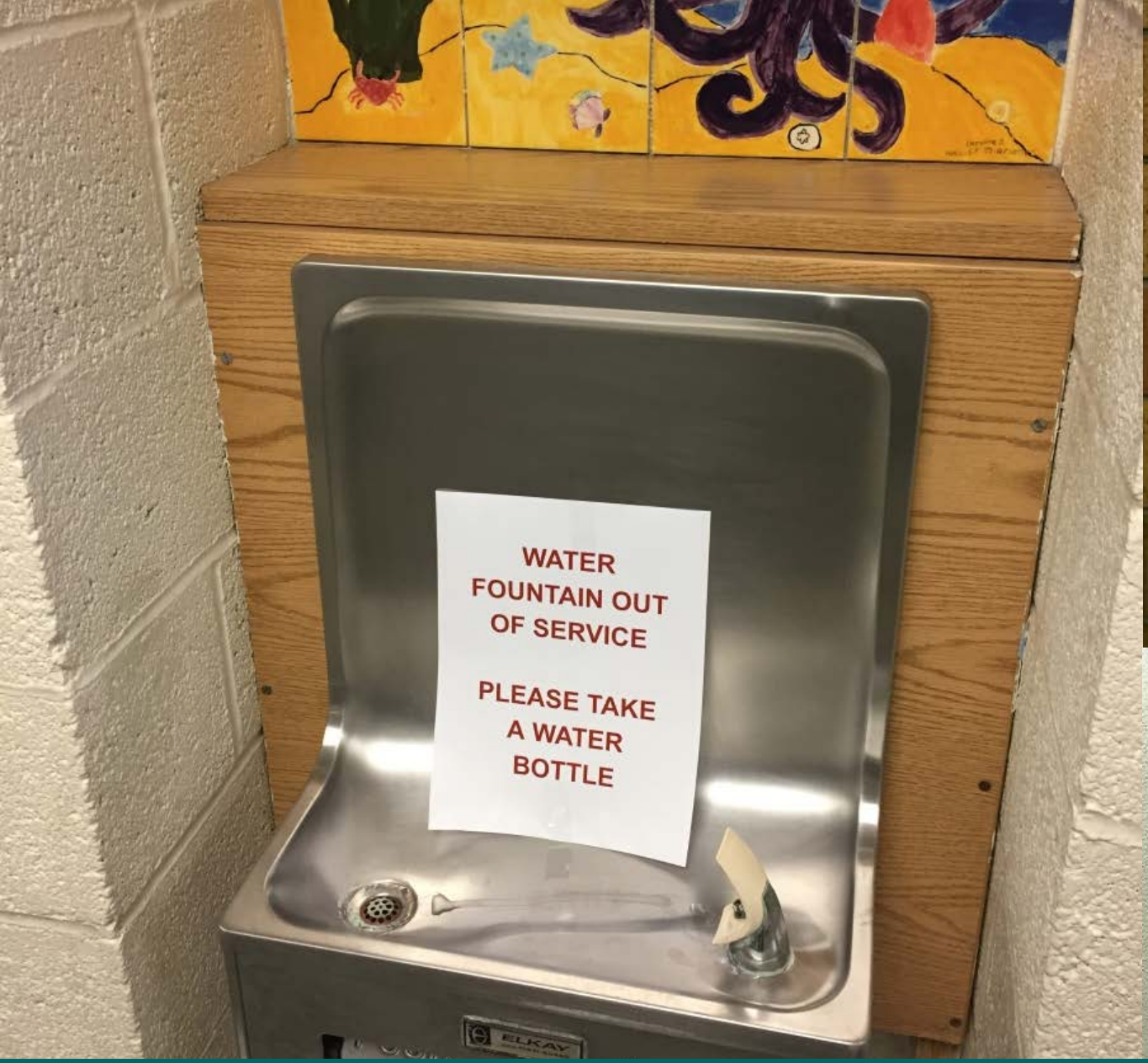
Public Water Systems use **15 ppb** as an action level

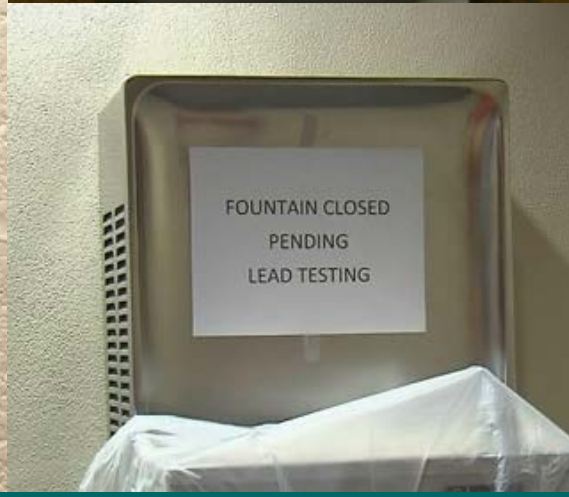
→Be sure to follow correct sampling procedures ←

Water should be stagnant for 8 to 10 hours

You can take steps to reduce exposure to lead in drinking water

- Remove potential sources of lead
- Run water before use
- Use cold water
- Use a filter
- Adjust chemistry





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Thank you

Roger.Crouse@maine.gov
287-5684

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