



# Lead Testing in School Drinking Water

Fall School Workshop, 2016

**PUBLIC HEALTH**  
ALWAYS WORKING FOR A SAFER AND  
HEALTHIER COMMUNITY



# Office of Drinking Water Mission

---

We work with others to protect the health of the people of Washington State by ensuring safe and reliable drinking water.

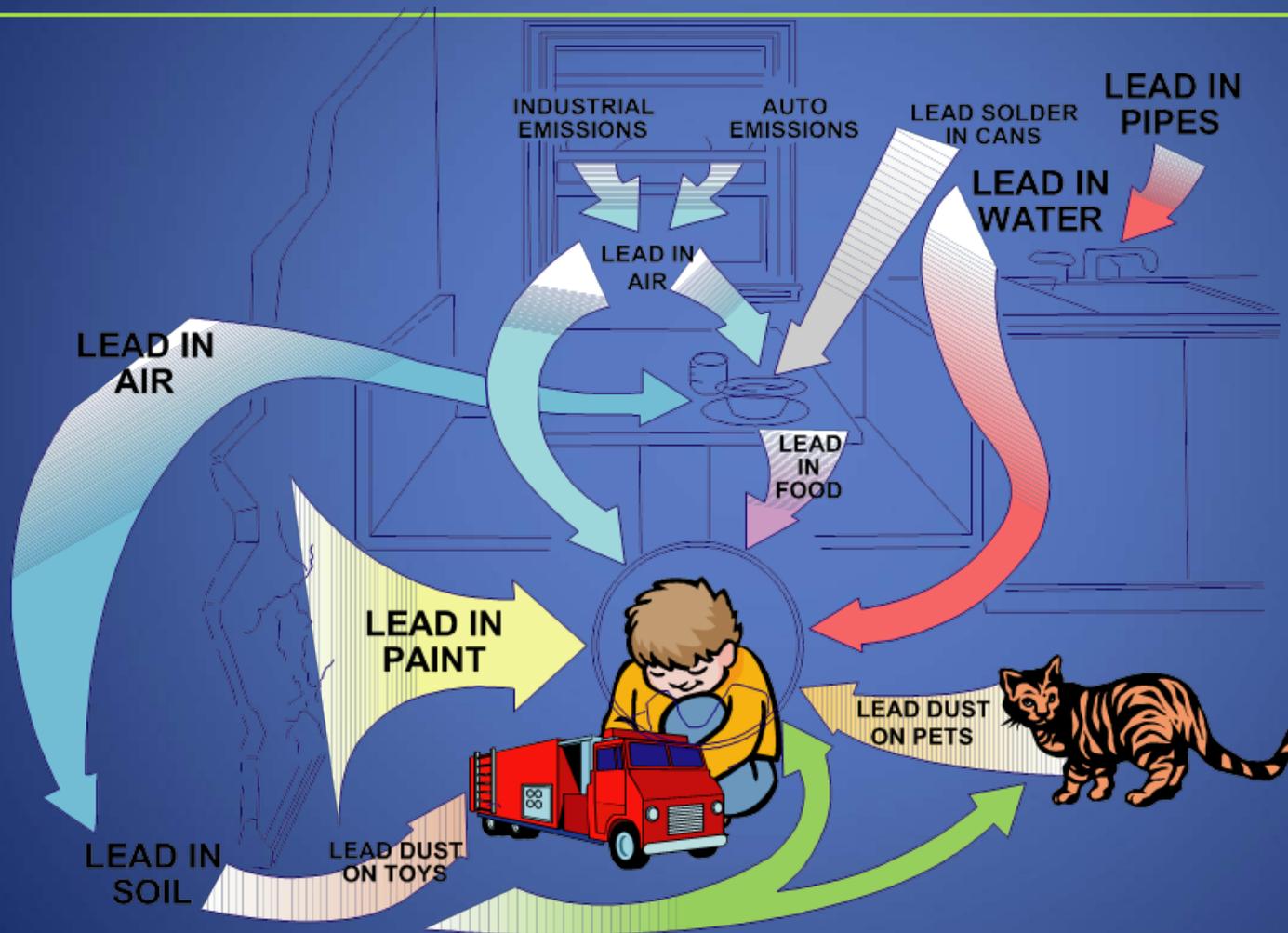


# Overview

---

- How lead gets into drinking water
- Lead in drinking water regulations
- Difference between schools and water systems
- Keys to successful testing in schools
- Actions following high results
- Risk communication keys

# Common Sources of Lead

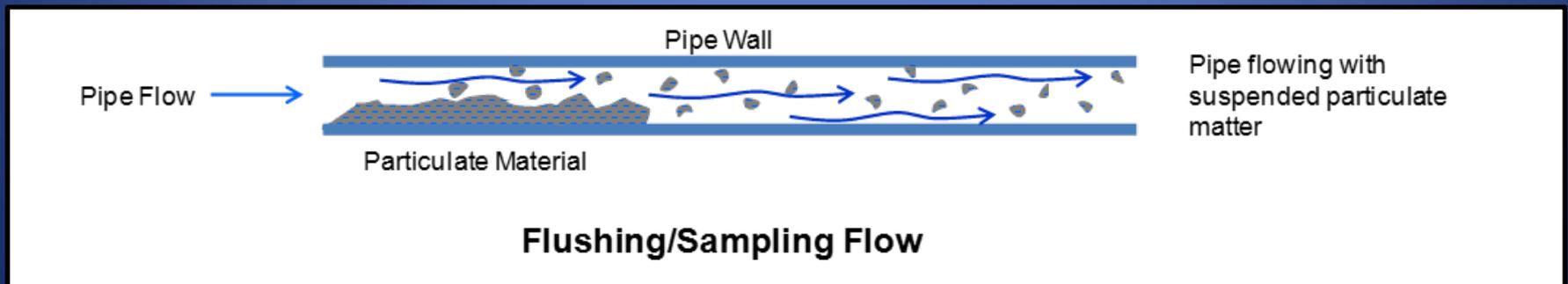


# Sources of Lead in Drinking Water



# Dissolved vs. Particulate

- Soluble lead and copper is caused by leaching from lead or copper-containing materials due to water stagnation
- Particulate lead and copper is caused by scouring or descaling of the pipe walls



Source: Cornwell et al., Water Research Foundation, in publication

# How is Lead Regulated in Public Water Systems?

---

- The Lead and Copper Rule implemented since 1991.
- Community and non-community, non-transient water systems.
- Measures lead at likely highest lead locations, mostly at homes
- Water systems must take action to reduce corrosivity if 10% of sample sites exceed the action level.

# How is Lead Regulated in Schools?

---

## Lead Contamination Control Act

- Federal rule adopted in 1988
- Schools and child care facilities
- Focus on drinking fountains containing lead
- Court challenge deemed unenforceable

## Primary and Secondary Schools (WAC 246-366)

- Adopted in 1991
- Updated in 2009 (WAC 246-366A)
- **NOT IMPEMENTED** due to lack of funding

# What Does “Lead Free” Really Mean?

## 1986 SDWA Lead Ban

- Requires use of “lead-free” plumbing providing water for human consumption
- Before the ban, solder used in plumbing typically contained 50% lead
- Banned use of fixtures that were not “lead-free” after June 19, 1986
- Revisions banned sale of fixtures that were not “lead-free” after August 6, 1998

**Lead Free Components:**  
contain up to 8% lead  
**Lead Free Solder:**  
contains up to 0.2% lead

## Reduction of Lead in Drinking Water Act

- Effective January 4, 2014
- Changes the definition of “lead-free” pipe
- Mainly affected brass or bronze components
- Look for products listed as NSF/ANSI 61G or NSF/ANSI Standard 372

**Lead Free Components:** Weighted average of less than 0.25% for surfaces in contact with potable water

# Governor's Directive 16-06

---

- Issued May 2, 2016
- Charged DOH, State Board of Health (SBOH), and Office of Financial Management to:
  - Review WAC 246-366A
  - Prepare decision package to implement portions of rule that related to lead

# Key Differences Between Water Systems and Schools

	Water System	School
Sampling Location	Customer Homes	Taps within buildings
Sample size	1000 mL	250 mL
Action Level	15 ppb	20 ppb
Response	Work toward centralized treatment	Take taps out of service; remediate

# So What Does It All Mean??

---

- No state or federal regulations require schools to test for lead unless they are a public water system.
- If schools served by a public water system choose to test, it is voluntary.

# EPA 3Ts for Reducing Lead in Drinking Water in Schools

---

- Training – Testing - Telling
- Good information on planning and communication
- Best used as a reference

[https://www.epa.gov/sites/production/files/2015-09/documents/toolkit\\_leadschools\\_guide\\_3ts\\_leadschools.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf)

# Keys to Successful Testing in Schools

---

## Training

- Plan ahead!
- Train samplers!

## Testing (Sampling)

- Know your school and how water is used
- Sample correctly for the intended purpose
- Follow up on high results

# Keys to Successful Testing in Schools (cont.)

---

## Telling

- Tell parents, teachers, and students
- Be accurate, timely and compelling in your communications
- Be transparent throughout process

# Training - Plan Ahead!

---

## Plan your program

- Review school records and assign roles
  - Communication lead?
  - Samplers – train them!
- Establish partnerships
  - Contact your public water system
  - Get technical assistance before you have problems

# Plan for the Unexpected

---

## Plan for fixtures with elevated levels

- Remove from service
- Collect flush sample
- Remediate if needed

# Know Your School and Water

---

- Contact public water system
- Types of fixtures
  - If possible, identify type and age
- Map of school with fixture locations
  - Fixtures regularly used for cooking or drinking
  - Assign a unique identifier/name for each sample tap

# Testing - Make a Sampling Plan

---

Define number of samples you will take

School rule has phased approach based on age of students

- 100 percent elementary schools
- 25 percent middle and high schools

# Testing - Make a Sampling Plan (cont.)

---

Train samplers!

Coordinate with a Certified Lab

- Identify testing for school and need 250 mL, wide-mouth bottles

# Plan for the Day of Sampling

---

Set a date for sampling

- Mid-week while school in session

Notify staff and samplers

- Ensure no water use before sampling
- Do not shut the water off at the wall

# Plan for the Day of Sampling (cont.)

---

Prepare samplers for sampling

- Procedures
- Bottles
- Sample forms

# Collecting First Draw Samples

---

Water should sit stagnant for 8 – 18 hours

- Do not flush the night before sampling
- Easiest to collect in early morning before school starts

Do not remove the aerator

# Collecting First Draw Samples (cont.)

---

- Place container under fixture
- Steady flow; not full open
- Fill bottle to appropriate level
- Fill out lab form and bottle label

‘Chain of custody’; samples to laboratory

# Follow-up to High Results

---

Remove from service

Consider another first-draw sample

- Fixtures close to 20 ppb

Flush samples

- Same prep as first draw sample
- Let water run continuously for 30 second before collecting sample

# Follow-up to High Results (cont.)

---

What this might tell you...

- If first draw is higher than the flush, then it's the fixture.
- If the flush is higher than the first draw, look at the plumbing.

# Remediation Options

---

## Fixture replacement

- Certified lead free fixtures
- Pre-condition
- First-draw test below 20 ppb before operational

# Remediation Options (cont.)

---

## Flushing program

- Requires flush sampling to determine flushing time
- Manual or automated flush
- Program should be followed

## Remove permanently

# Telling -- Hints for Effective Communication

---

- Methods of communication
- Timing of Communication
- Content

# Keys to Communication

---

- Be the first to speak
- Be clear
- Be transparent
- Tell the whole story
- Have a plan

# Successful Testing in Schools - Summary

---

## Training

- Success requires a well-thought and well-executed plan.

## Testing

- Know your school plumbing, how water is used
- Sample correctly for the intended purpose
- Mitigate problems and retest

# Successful Testing in Schools - Summary

---

## Telling

- Be accurate, timely and compelling in your communications

# Online Resources for Schools

---

## ODW Lead in Schools webpage

- How lead gets into water
- Sampling brochure
- Link to EPA's 3-T's
- Link to health effects information

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/Contaminants/LeadinSchools>

---

# Questions?

# Key Schools Team Staff

---

Southwest Regional Office:

Sophia Petro – Source Water Quality Lead

360-236-3046

[sophia.petro@doh.wa.gov](mailto:sophia.petro@doh.wa.gov)

Kay Rottell – Regional Engineer

360-236-3037

[kay.rottell@doh.wa.gov](mailto:kay.rottell@doh.wa.gov)

# Key Schools Team Staff

---

Eastern Regional Office:

Stan Hoffman– Source Water Quality Lead

509-329-2132

[stan.hoffman@doh.wa.gov](mailto:stan.hoffman@doh.wa.gov)

Northwest Regional Office:

Steve Hulsman– Source Water Quality Lead

253-395-6777

[steve.hulsman@doh.wa.gov](mailto:steve.hulsman@doh.wa.gov)