Vermont Lead in School and Child Care Drinking Water Progress Report Summary

Findings from the First Round of Testing and Remediation
June 2019 – December 2021

Published in September 2022
Common Terms Found in the Report

• The Vermont Action Level is 4 parts per billion (ppb). If lead is found at or above 4 ppb, a school or child care provider must immediately take the fixture out of service and take steps to reduce the amount of lead to below 4 ppb.

• The Vermont Health Advisory Level is 1 ppb. There is no safe level of exposure to lead and 1 ppb is the lowest level that can be reliably measured in water.

• Remediation is the process of fixing a tap to eliminate or reduce the amount of lead.

Resources and More Information

• You can find more details in the full 2022 Progress Report.

• See the results and remediation status of individual schools and child care facilities.

• Find updates and more information on the lead testing in drinking water program for schools and child care providers.
Overview of Lead in Vermont

An explanation of why Vermont tested drinking water in schools and child care facilities for lead
Why protect children from exposure to lead?

Lead poses a special risk to children because their brains are still developing, and they absorb lead into their bodies more easily than adults do.

Exposure to lead can slow children’s growth, impair their development and learning, and can cause behavior problems.

Each year hundreds of Vermont children age 6 and younger are found to have levels of lead in their blood at or above 5 micrograms per deciliter (µg/dL).

<table>
<thead>
<tr>
<th>Year</th>
<th>Levels of Lead (µg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>480</td>
</tr>
<tr>
<td>2018</td>
<td>420</td>
</tr>
<tr>
<td>2019</td>
<td>427</td>
</tr>
<tr>
<td>2020</td>
<td>400</td>
</tr>
<tr>
<td>2021</td>
<td>387</td>
</tr>
</tbody>
</table>

Source: Healthy Homes Program, Vermont Department of Health
Why test for lead in drinking water at schools and child care facilities?

While a major source of lead poisoning in Vermont children is dust from lead paint, lead in older plumbing and fixtures can add to a child’s overall lead exposure.

Prior efforts to test for lead were not comprehensive.

- Only some schools and child cares were required to test some taps for lead.
- Prior testing efforts used 15 ppb as a remediation level.
- Act 66 requires all taps at all schools and child care facilitates to be tested for lead.
- Act 66 requires remediation when lead levels at or above 4 ppb are found.
What lead levels are used as benchmarks in this report?

**Vermont Action Level for Schools and Child Care Facilities:** 4 ppb is the level at which action must be taken to reduce lead in drinking water at school and child care facilities.

**Vermont Health Advisory Level:** 1 ppb is based on the lowest level that can be reliably measured in water (there is no safe level of exposure to lead).

Both levels are more protective than federal law.
What Vermont Did

A description of the testing and remediation process
The process for testing drinking water for lead in school and child care facilities included four steps:

1. **Prepare**
   - Inventory taps
   - Order test kits
   - Send pre-sampling notification

2. **Test**
   - Collect samples
   - Return samples to laboratory
   - Analyze samples

3. **Receive Results**
   - Review for next steps
   - Send results notification
   - Results posted

4. **Remediate (if needed)**
   - Choose remediation action
   - Report remediation action
   - Collect follow-up samples
Testing Results

A summary of how many facilities and taps were tested, how many taps were at or above the action level, and how the results compare across different types of taps.
Thousands of taps had lead levels at or above the action level

98% of schools and child care facilities completed testing

15,366 taps were tested

1 out of every 5 taps was at or above the Vermont Action Level of 4 ppb

Results ranged from not detected to more than 25,000 ppb
Lead results for schools, including school-based child care programs

- **32** was the average number of taps (up to 178 max)
- **75%** of schools had at least one tap at or above 4 ppb
- **21%** of all taps were at or above 4 ppb and required remediation
Lead results for non-school based child care programs

Child Care Facilities

- 3 was the average number of taps (up to 24 max)
- 14% of child care facilities had at least one tap at or above 4 ppb
- 9% of all taps were at or above 4 ppb and required remediation
Sinks had the most lead, bottle fillers had the least

First draw samples at or above the Vermont Action Level (4 ppb) in Schools

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Sinks</td>
<td>27%</td>
</tr>
<tr>
<td>Drinking Fountains</td>
<td>17%</td>
</tr>
<tr>
<td>Bottle Fillers</td>
<td>1%</td>
</tr>
</tbody>
</table>

First draw samples at or above the Vermont Action Level (4 ppb) in Child Care Facilities

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Sinks</td>
<td>10%</td>
</tr>
<tr>
<td>Drinking Fountains</td>
<td>9%</td>
</tr>
<tr>
<td>Bottle Fillers</td>
<td>2%</td>
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Vermont Department of Health
Lead was more frequently found in the **fixture**, not the **plumbing**

**First draw samples** had more average lead (in ppb) than **flush samples**

**First draw samples** test water coming from the fixture

**Flush samples** test water coming from the plumbing

<table>
<thead>
<tr>
<th></th>
<th>Sinks</th>
<th>Drinking Fountains</th>
<th>Bottle Fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (ppb)</td>
<td>8.5</td>
<td>3.2</td>
<td>&lt;1</td>
</tr>
<tr>
<td></td>
<td>1.3</td>
<td>1.4</td>
<td>&lt;1</td>
</tr>
</tbody>
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Remediation Results and Costs

A summary of how many facilities required remediation, what remediation actions were taken, and how much remediation cost (as of February 2022)
96% of remediation actions were easy

**Easier**

- Fixture replacement: 63%
- Permanent removal: 20%
- Point-of-use filter installation: 11%
- Permanent removal and installation of new fixture in new location: 1%

**Harder**

- Plumbing replacement or bypass: 4%
- Service line replacement: <1%
- Treatment installation or optimization: 0%
- Automatic flushing device installation: 0%

*Note: Percentages are rounded to the nearest whole number.*
On average, remediation costs per tap were low

90% of reimbursed remediation costs were less than $500*

The actual cost of fixture replacement, including parts and labor, was reimbursable up to maximum amounts.

- $1,800 Public drinking fountains and ice machines
- $650 Taps used for cooking
- $400 All other taps in child care facilities
- $350 All other taps in schools

*Costs are based on remediation reimbursement requests as of February 8, 2022.
Recommendations and Conclusion

Suggestions for keeping lead levels in drinking water low
Simple steps can help keep lead levels as low as possible

- Remove redundant or seldom-used fixtures.
- Encourage the use of bottle fill stations.
- Permanently remediate fixtures. Do not rely solely on flushing programs or filters.
Lead in drinking water can be reduced to below 4 ppb at a reasonable cost

- Lead was more frequently found in the fixture, not the plumbing
- Most of the remediation actions reported included low-cost remediation actions
- Taps were successfully remediated to a lead level below 4 ppb for less than $500 per tap 90% of the time