January 21, 2018

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Oregon Department of Education
Early Learning Division
775 Summer Street NE #300
Salem, Oregon 97301

Re: Lead testing in licensed and regulated childcare facilities

Ms. Chatterjee,

The Environmental Defense Fund (EDF) appreciates the opportunity to submit comments to Oregon Department of Education, Early Learning Division as it finalizes its rule for lead testing in licensed and regulated childcare facilities.

EDF's mission is to preserve the natural systems on which all life depends. We have more than two million members and a staff of 700 scientists, economists, policy experts, and other professionals around the world. Guided by science and economics, we find practical and lasting solutions to the most serious environmental problems. This has drawn us to areas that span the biosphere: climate, oceans, ecosystems and health. Our Health Program seeks to safeguard human health by reducing exposure to toxic chemicals and pollution, including lead in drinking water.

We fully support Oregon's decision to establish mandatory lead and water testing in childcare facilities. Even at low levels, lead exposure can harm the brain development of young children – resulting in learning and behavioral problems for the rest of their lives.[1]

Last summer, the Pew Charitable Trusts (Pew) and the Robert Wood Johnson Foundation (RWJF) released a report on the costs of lead and the impact of various policy solutions to protect children from lead exposure.[2] One of their major recommendations is to:

> **Reduce lead in drinking water in homes built before 1986 and other places children frequent.** States and municipalities, with support from federal agencies, should fully replace lead service lines, from street to structure, that provide drinking water to homes built before the EPA banned their use. . . . States and localities should investigate and mitigate drinking water hazards in schools and child care facilities.

While the recent national attention on lead and drinking water has spurred action to address lead in schools, fewer states have addressed lead in water in childcare settings – despite the fact that children

[1] National Toxicology Program, 2012. "NTP Monograph: Health Effects of Low-Level Lead." Available at: https://ntp.niehs.nih.gov/ntp/ohat/lead/final/monographhealtheffectslowlevellead_newissn_508.pdf.

[2] Robert Wood Johnson Foundation & Pew Charitable Trusts, 2017. 10 Policies to Prevent and respond to Childhood Lead Exposure. Available at: http://www.pewtrusts.org/~/media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf.

under the age of six are most vulnerable to the detrimental impacts of lead exposure.[3] Five states – Connecticut, Illinois, New Jersey, Rhode Island, and Washington – have childcare lead in water testing requirements. EDF has detailed each of these programs, including testing frequency, action level/standard, corrective action, and notification requirements, on our website.[4] The table below provides a summary; see our website for additional detail.

State Requirements Regarding Lead in Drinking Water in Childcare Centers

State	Testing Frequency	Standard	Corrective Action	Parent and Staff Notifications
Connecticut (Feb. 2017)	License application and every 2 years thereafter.	None.	None.	None.
Illinois (December 2017)	Licensed facilities constructed after 2000, six months after lead detected, and every year thereafter.	If lead is detected (by approved laboratory).	Mitigation and implementation plan.	Lead testing information, results, and mitigation efforts provided in enrollment materials.
New Jersey (March 2017)	Initial or renewal application, relocation, as requested by state.	Elevated as defined by NJDEP (currently 15 parts per billion (ppb)).	Stop using all drinking water sources, provide bottled water for drinking and food preparation.	Results posted in building. Notify parents if elevated levels found.
Rhode Island (Nov. 2013)	Prior to licensing and after renovations or after property alterations.	Lead-safe (5-15 ppb in a first draw sample or less than 15 ppb in a flushed sample) or lead-free (less than 5 ppb in first sample draw).	Water source must be lead-free or lead-safe.	None.
Washington (May 2017)	Prior to licensing and every 6 years thereafter.	Levels above EPA Lead Action Level (90^{th} percentile above 15 ppb).	Close the program or supply bottled water and consult with WADOH, notify state licensing agency.	Notify parents if above action level and again when levels below action level.

We commend Oregon for being a leader in this space and provide the following comments for consideration.

[3] U.S. EPA, 2017. "Learn about Lead." Available at: https://www.epa.gov/lead/learn-about-lead.

[4] EDF Health Blog: http://blogs.edf.org/health/2017/08/17/protecting-the-most-vulnerable-lead-in-drinking-water-testing-requirements-for-child-care-centers/.

Incorporate lead service line investigation

We recommend that the requirements include investigation and removal of lead service lines (including goosenecks[5]), if identified. While lead service lines – lead pipe connecting the water main in the street to the building – were banned by Congress in 1986,[6] there are still an estimated 6-10 million in use in the U.S. today.[7] When present, lead service lines contribute an estimated 50-75% of the lead in water at a given property.[8] Furthermore, lead service lines can unpredictably release particulate lead into the water, which can complicate testing for lead sources at fixtures. As recommended by the Lead Service Line Replacement Collaborative – a joint effort of 25 national public health, water utility, environmental, labor, consumer, housing, and state and local governmental organizations – the best long-term solution to address lead service lines is to remove them.[9]

Furthermore, the RWJF/Pew analysis concluded that removing leaded drinking water service lines from the homes of children born in 2018 would protect more than 350,000 children and yield $2.7 billion in future benefits, or about $1.33 per dollar invested.[10] Within the context of a childcare facility – where many more children are present than home settings – we expect that the economic benefits of lead service line replacement would be much greater.

According to a 2016 study conducted by the American Water Works Association, there are an estimated 14,000 lead service lines in Oregon.[11] Large childcare centers are unlikely to have lead service lines since their water needs exceeds the 2" maximum diameter typically used for lead pipes; however, lead service lines are more commonly found at smaller properties, such as home-based childcare. The proposed rule suggests that many of the childcare centers that would be subject to the rule are located in smaller facilities: "Of the 4,300 licensed facilities, approximately 3,000 are operated in a home or small businesses setting" (Rule Summary). Therefore, there may be some licensed childcare centers in Oregon with lead service lines – but not enough that this requirement would be overly burdensome. Those facilities with lead service lines can work with their local water utility to develop a plan and implement replacement.

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[5] Though the Lead and Copper Rule does not currently define a lead service line to include service lines that only have lead pipe in a gooseneck or pigtail, EPA's National Drinking Water Advisory Council recommended modifying the definition to include lead a service line where any portion, including a lead pigtail, gooseneck, or other fitting, is made of lead. See: NDWAC, 2015. Report of the Lead and Copper Rule Working Group to the National Drinking Water Advisory Council. Available at: https://www.epa.gov/sites/production/files/2016-01/documents/ndwaclcrwgfinalreportaug2015.pdf.

[6] U.S. EPA. 2017. "Use of Lead Free Pipes, Fittings, Fixtures, Solder and Flux for Drinking Water." Available at: https://www.epa.gov/dwstandardsregulations/use-lead-free-pipes-fittings-fixtures-solder-and-flux-drinking-water.

[7] Cornwell, D., et al. (2016). National Survey of Lead Service Line Occurrence. *Journal AWWA*, 108(4): 182-191.

[8] Sandvig, A., et al. (2008). "Contribution of Service Line and Plumbing Fixtures to Lead and Copper Rule Compliance Issues." Prepared for the American Water Works Research Foundation, Report 91229. Available at: http://www.waterrf.org/PublicReportLibrary/91229.pdf.

[9] Lead Service Line Replacement Collaborative. "About Us." Available at: https://www.lslr-collaborative.org/about-us.html.

[10] RWJF/Pew, 2017. 10 Policies to Prevent and respond to Childhood Lead Exposure. Available at: http://www.pewtrusts.org/~/media/assets/2017/08/hip_childhood_lead_poisoning_report.pdf.

[11] Cornwell, D., et al. (2016). National Survey of Lead Service Line Occurrence. *Journal AWWA*, 108(4): 182-191.

We recommend that the rule takes the following approach to address lead service lines in childcare centers:

1. For all properties built before 1986, both review historical records (i.e., facility records, utility records) and have a licensed plumber conduct a physical inspection.
2. If a lead service line is identified, work with the local water utility to remove the lead service line prior to conducting fixture testing, following the best practices to minimize lead exposure identified in the American Water Works Association's flushing procedures.[12]

Finally, the proposed rule requires: "Flushing pipes by running the tap until the water is noticeably cooler" (section 7(a)) and "Running tap water for at least two minutes after water sits in the pipes for six hours or more" (section 7(b)). Neither of these strategies is sufficient if there is a lead service line present. In fact, flushing until the water is cooler or flushing for two minutes may actually draw water that has been setting in the service line – resulting in higher lead levels. We recommend increasing the flush time to 5 minutes, especially if a lead service line is present and has not yet been removed.

Use a more protective action level – 20 ppb is not based on science or health

The rule proposes an action level of 20 ppb (section 6). We expect that this number was selected based on EPA's 2006 technical guidance, "3Ts for Reducing Lead in Drinking Water in Schools," which relies on 20 ppb to trigger action.[13] However, 20 ppb is neither based on health nor a rigorous review of the science.

In 2017, EPA released a draft report, "Proposed Modeling Approaches for a Health-Based Benchmark for Lead in Drinking Water."[14,15] While there is no safe level of lead, the vision of such a health-based benchmark is to help parents and public health officials know when lead in the drinking water reaches a level likely to produce an "elevated blood lead level." EPA's draft report provided a range of potential values. EDF conducted its own analysis of the data EPA provided, and concluded that a conservative health-based benchmark for individual action on lead in drinking water would be 3.8 ppb.[16]

We are currently conducting a pilot project on testing and remediation of lead in water at twelve childcare centers in four states: Illinois, Michigan, Mississippi, and Ohio. Our results to date demonstrate that

[12] American Water Works Association, 2017. C810-17 Standard for Replacement and Flushing of Lead Service Lines. Available at: https://www.awwa.org/store/productdetail.aspx?productid=65628258.

[13] U.S. EPA, 2006. "3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: Revised Technical Guidance." Available at: https://www.epa.gov/dwreginfo/3ts-reducing-lead-drinking-water-schools-and-child-care-facilities.

[14] U.S. EPA, 2017. "Proposed Modeling Approaches for a Health-Based Benchmark for Lead in Drinking Water." Available at: https://www.epa.gov/sites/production/files/2017-01/documents/report_proposed_modeling_approaches_for_a_health_based_benchmark_for_lead_in_drinking_water_final_0.pdf.

[15] The analysis was also analysis was published in an Environmental Health Perspectives article. See: Zartarian, V., et al. (2017). Children's Lead Exposure: A Multimedia Modeling Analysis to Guide Public Health Decision-Making. *Environmental Health Perspectives*, DOI:10.1289/EHP1605. Available at: https://ehp.niehs.nih.gov/ehp1605/.

[16] See EDF's full analysis here: http://blogs.edf.org/health/2017/02/28/health-based-action-level-for-lead-in-drinking-water/.

<10% (22 of 225) of fixtures tested had any readings higher than 3.8 ppb. This evidence demonstrates that 3.8 ppb is an achievable action level.

Furthermore, the state of Illinois, which required mandatory lead in water testing at childcare centers under SB-550 last January, recently released its policy guide to conduct such testing (2017.13).[17] The guide requires a mitigation and implementation plan "if lead is present" (i.e., any lead is detected) based on testing results from an Illinois Environmental Protection Agency (IEPA) approved laboratory.

In sum, EDF does not believe that the proposed 20 ppb action level is sufficiently protective. We highly recommend that the value is lowered at least to 3.8 ppb, which we believe is achievable both based on our data and the precedent set by the state of Illinois.

Provide for additional lead remediation options

The rule, as proposed, requires the childcare facility to either shut down the facility or provide bottled water if a single fixture has a lead level above 20 ppb while the facility simultaneously submits a plan of action to the Office of Child Care. Shutting down the school is likely to cause disruption and turmoil, and may be avoidable in most cases. Unless there is a lead service line present, the problem may well be isolated to a few fixtures across the center. In these cases, the facility could shut off service to those select fixtures, while more permanent solutions are developed (e.g., fixture replacement). We recommend a tiered approach to corrective action, such that stricter action is triggered by higher and more frequent lead readings. For example, if a significant number of fixtures have lead readings well above the action level, it may be appropriate to shut down the facility.

Require follow-up testing following corrective action

The rule currently requires testing only every six years. We recommend that the rule include a requirement for follow-up testing and results submission to the Office of Child Care within three months at those locations where the initial results were above the established action level. Without such follow-up testing, the facility will have no way to know if the corrective actions taken were successful. Furthermore, we recommend that the frequency of testing be tiered based on the lead levels detected. Facilities with high lead levels should be required to conduct more frequent testing – more frequent than a six-year basis – to create an incentive to reduce lead levels.

Thank you for your consideration of these comments.

Sincerely,

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Tom Neltner, JD
Chemicals Policy Director

[17] Illinois Department of Children and Family Services, Policy Guide 2017.13. Lead Testing of Water in Licensed Day Care Facilities. December 6, 2017. Available at: https://www.illinois.gov/dcfs/aboutus/notices/Documents/Policy_Guide_2017.13.pdf.