

Partial Lead Line Replacement

As public water systems try to reduce lead in public drinking water, there are concerns about partial lead service line replacement (PLSLR). Partial lead service line replacement is the construction practice of “digging up old lead water pipes (“service lines”) and replacing a portion with [non-lead] pipe”.

In 2011 an advisory board to the U.S. EPA concluded that there was inadequate data to fully assess the impact of partial (PLSLR) versus full line (FLSLR) replacement.ⁱⁱ However, recent research suggests that partial lead line replacement instead of full lead line replacement can pose increased risk of lead in water.^{iii,iv} The EPA Lead and Copper Rule (LCR) Revisions White paper ^v in October 2016 noted the following:

“The EPA Science Advisory Board concluded in its 2011 report to EPA that: PLSLRs have not been shown to reliably reduce drinking water lead levels in the short term, ranging from days to months, and potentially even longer. Additionally, PLSLR is frequently associated with short-term elevated drinking water lead levels for some period of time after replacement, suggesting the potential for harm, rather than benefit during that time period. Available data suggest that the elevated tap water lead levels tend to then gradually stabilize over time following PLSLR, sometimes at levels below and sometimes at levels similar to those observed prior to PLSLR”

The EPA is currently considering revising the LCR and is evaluating a number of issues related to PLSLR. These issues include the risk to the public, the cost of private line replacement, and the legal issues related to ownership of lines by the private and public sectors. At this time, the EPA requires any systems that have exceeded the LCR rule action level of 15 parts per billion to replace 7% of the lead lines that they own. Since public water systems must comply with EPA regulations, this will unfortunately result in PLSLR. Therefore to mitigate any risk from PLSLR, water systems that have exceeded the LCR action for lead must comply with EPA requirements including:

- 1) Alert customers that they may experience a temporary increase in lead levels in their water after PSLCR and provide them with guidance for mitigation.
- 2) Notify customers 45-days prior to PLSLR to provide homeowners with the opportunity to replace their private portion of the service line and explore all options to facilitate this action.
- 3) Conduct home water testing in the home 72 hours after replacement and inform customers of results as required.

In addition to these requirements, ACHD recommends that customers

- 1) Receive water tests prior to partial line replacement.
- 2) Fully flush their systems after partial line replacement as recommended.
- 3) Be provided with NSF certified lead water filters for up to 9 months after the replacement.
- 4) If 72-hour water testing is above the LCR action level, water should be tested again 6 months later.
- 5) If the customer has a child <6 years of age they should contact the ACHD for additional education and guidance about blood lead testing.

For populations at high risk such as infants, only filtered or bottled water should be used for formula preparation.

Here in Allegheny County, ACHD recognizes that PLSLR has the potential to raise lead levels in water in the short term posing an increased risk to the public. Whenever possible it is preferred to do full lead

line replacement. Nationally some municipalities are trying to address legal issues and have passed their own ordinances requiring full line replacement. ACHD urges municipalities to consider such ordinances to resolve jurisdictional issues and develop financial strategies to help achieve this goal. ACHD is prepared to work with all stakeholders towards a more effective solution. If you have questions, contact ACHD Housing and Community Environment program at (412) 350-4046.

To find out what your water system might be doing to mitigate risk please contact your water system.

ⁱ Renner R. Reaction to the Solution: Lead Exposure Following Partial Service Line Replacement. *Environmental Health Perspectives*. 2010;118(5):A202-A208. *The word copper was replaced with non-lead as copper is not the only material that is used.*

ⁱⁱ Sackhamer and Griffiths letter to EPA re SAB Evaluation of the Effectiveness of Partial Lead Service Line Replacements September 2011

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ⁱⁱⁱ Brown MG, Margolis S. *Lead in Drinking Water and Human Blood Lead Levels in the United States MMWR 2012 / 61(04);1-9*

^{iv} Trueman BF, Camara E, Gagnon. *Evaluating the effects of full and partial lead service line replacement on lead levels in drinking water*. *Environmental Science and Technology*. 2016, 50; 7389-7396

^v Lead and Copper Rule Revisions White paper. US EPA Office of Water, Washington DC, October 2016