

Using Date of Construction to Classify Water Service Lines as Non-Lead

Virginia Department of Health, Office of Drinking Water

A waterworks owner or operator may be confident that their entire system or a subset of it is non-lead because it was built after lead pipes were banned. ODW has developed guidance for these systems to use date of construction as the basis for identifying services lines as non-lead in the system's Service Line Inventory.

1. What dates does ODW consider valid for determining that a service line is non-lead based on the timing of lead bans?

For the privately-owned portion of a service line, we can look at language from Virginia's Uniform Statewide Building Code. The USBC was amended in 1978 to disallow lead pipes. But some utilities had their own construction standards at that time; it is possible that the USBC was interpreted to pertain only to premise plumbing and pipes installed as part of building construction, and not to utility infrastructure. So, for the utility-owned side, we have to look at the Federal Lead Ban, an amendment to the Safe Drinking Water Act that was enforced beginning in 1988 and prohibited the use of lead-based materials in all components of public water systems.

Effective Date	Item	Description of Policy	Applies To
August 1, 1978	1978 USBC Accumulative Supplement (1978 BOCA Basic Plumbing Code)	This supplement to the Virginia Uniform Statewide Building Code (which was first adopted in 1973 to replace local building codes) did not allow lead water service pipe for water service pipes or premise plumbing.	The privately-owned portion of a service line.
June 19, 1988	Public Law 99-339 Safe Drinking Water Act Amendments of 1986, also known as the Federal Lead Ban	This amendment to the Safe Drinking Water Act was enacted in 1986 and prohibited the use of pipes, solder or flux that were not "lead free" in public water systems or plumbing in facilities providing water for human consumption. Enforcement began 24 months from enactment, on June 19, 1988.	All waterworks components, including both the utility-owned and privately-owned portions of a service line.

2. What do waterworks do with this information?

Each waterworks must identify the materials for both the private- and utility-owned side of each service line. For connections to buildings constructed between August 1, 1978, and June 18, 1988, a waterworks may begin by classifying the privately-owned side of the service line as non-lead. For connections constructed on or after June 19, 1988, a waterworks may begin by classifying both sides of the service line as non-lead. **In both cases, some degree of corroboration is required before submitting the inventory with date-based classifications.**

3. How should a waterworks corroborate a records-based classification such as date of construction?

There are two groups of data to corroborate, with different standards. The first group is all lines installed within the first 24 months after the effective date of the USBC or Federal Lead Ban. The second group is all lines installed more than 24 months after those key dates.

- For the first group, to account for the possibility of delays in the local enforcement of lead bans, service lines constructed shortly after these two key dates require some additional scrutiny. A subset of at least 1% of these lines (or 5 lines, whichever is greater) installed in the period 24 months after the respective lead bans must be physically verified. For instance:
 - If a waterworks identifies 1300 service lines that were installed between August 1, 1978, and July 31, 1980, they may classify the privately-owned side of that group of 1300 lines as non-lead if they physically verify at least 13 of these lines and demonstrate that they are indeed constructed of a non-lead material.
 - If a waterworks identifies 280 service lines that were installed between June 19, 1988, and June 18, 1990, they may classify both the utility-owned and privately-owned side of that group of 280 lines as non-lead if they physically verify at least 5 of them, because 5 lines is the minimum.
 - If a waterworks identifies less than 5 lines constructed in either of these 24-month periods, they must physically verify all of them.
 - Physical verification must include either visual inspection or water quality sampling according to ODW's sampling protocol.
 - The subset of lines to physically verify should be selected randomly from among the group of lines in this category. Note that this may mean two separate pools to randomly select from, if a waterworks has identified lines constructed during both the 1978-1980 and 1988-1990 periods.
- For connections installed more than 24 months after these two key dates, some corroboration that service lines are non-lead is required. This may include physical verification, as described above, but this is *not* required. A waterworks is responsible for demonstrating to ODW that they have satisfactorily corroborated the service line classifications they've made based on date of construction. Strategies for doing so may include:
 - Physically verify a subset of at least 1% of these lines (or 5 lines, whichever is greater) installed in the period (optional).
 - Interviews with experienced people who have personal knowledge of materials used in specific locations, such as distribution system staff, building inspectors, and plumbers.
 - Records, such as service construction and maintenance records including meter installation, water main installation, replacement or repairs, and distribution system maps and drawings, including as-built drawings.
 - Local statutes or policies showing specific ways in which the USBC and/or Federal Lead Ban were implemented and actively enforced.

A waterworks with good records from repairs, meter projects, etc. and has previously verified a service line in this time period is not lead, can use previous verifications toward the minimum requirement.