



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

WSG 178


Date Signed: October 20, 2006

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OFFICE OF
WATER

MEMORANDUM

SUBJECT: Management of Aerators during Collection of Tap Samples to Comply with the Lead and Copper Rule

FROM: 
Stephen Hearle, Director
Drinking Water Protection Division
Office of Ground Water and Drinking Water

TO: EPA Drinking Water Branch Chiefs
Regions I-X

The Lead and Copper Rule requires monitoring at customer taps to identify levels of lead that may result from corrosion of lead-bearing components in the distribution system or household plumbing. Public water systems are not allowed to use sampling sites that include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants (40 CFR § 141.86(a)), as these faucets will have removed the lead.

It has come to our attention that some EPA guidance documents have included information that may have led public water systems to give customers directions that inadvertently reduce the potential to identify lead in drinking water provided at customer taps – taps that are otherwise eligible for inclusion as a sampling site.

Lead-bearing particulate matter may end up in drinking water from physical corrosion of leaded solder in household pipes. Many kitchen and bathroom taps that are used to provide water for human consumption have an aerator as part of the faucet assembly. Aerators serve to introduce air into the water flow, which makes it feel as if a larger water flow is coming out of the tap. The use of aerators is widely viewed as an effective water conservation practice. Although not intended to remove inorganic contaminants, screens that are part of the aerator may trap particulate matter or debris within the faucet.

EPA recommends that homeowners regularly clean their aerators to remove particulate matter; however, neither EPA's regulations nor the Agency's *Lead and Copper Monitoring and Reporting Guidance for Public Water Systems* (EPA-816-R-02-009) provide public water systems with specific instructions on how to consider the

aerator during the collection of tap samples. However, a Pocket Sampling Guide for Small Systems developed through an EPA grant in 2004¹ and a recently released CD based on that guide² do include information recommending removal of the aerator prior to sampling for lead. Additionally, the Agency released guidance last December for schools that receive water from a public water system that included advice to remove the aerator prior to sampling.

We have also recently seen some public water system homeowner sample collection instructions which recommend that homeowners remove the aerator from the tap prior to sampling. Removal and cleaning of the aerator is advisable on a regular basis. However, if customers are only encouraged to remove and clean aerators prior to drawing a sample to test for lead, the public water system could fail to identify the typically available contribution of lead from that tap, and thus fail to take additional actions needed to reduce exposure to lead in drinking water. Therefore, public water systems should not recommend that customers remove or clean aerators prior to or during the collection of tap samples for lead.

If the results from the initial sample are above the action level, the public water system may want to consider taking a second sample to determine whether particulate matter is the source of lead. For this sample, the aerator would be cleaned or removed prior to sampling so that the two samples could be compared. The system may also want to test any debris to determine if it is lead-bearing. This would allow the public water system to better identify appropriate advice to give the homeowner and the community about measures they can take to reduce their exposure to lead. Note that the results of both samples would be included in the set of samples used to determine the 90th percentile (i.e., the first could not be invalidated on the basis of presence of lead-bearing debris in the aerator).

As noted earlier, although EPA's regulations and Lead and Copper Rule guidance for public water systems have not included advice about managing aerators during sampling, some EPA guidance documents have included such information. This is an error and we are currently revising those guidance documents to advise that aerators remain in place during initial sampling for lead from taps.

EPA's recommendation about the consideration of aerators during water sampling applies only to samples that are collected to identify lead and copper in drinking water. It does not apply to tap samples that may be collected to support the public water system's optimal water quality parameter monitoring program. The aerator should be removed, and the faucet outlet cleaned and thoroughly flushed to remove scale particles, prior to collection of samples that may be monitored for pH and/or dissolved oxygen.

¹ Pocket Sampling Guide for Operators of Small Systems, New England Water Works Association, 2004

² EPA's Interactive Sampling Guide for Drinking Water System Operators, US EPA, EPA 816-C-06-001, 2006

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As an attachment to this memorandum, we are providing EPA's suggested directions for collecting tap samples for lead in drinking water that has been amended to specifically address aerators. Please share this information with your state drinking water program directors. We will also include this information in any future revisions of the *Lead and Copper Monitoring and Reporting Guidance for Public Water Systems*. If you have any questions, please contact Ron Bergman, Chief of the Protection Branch, at 202-564-3823.

Attachment

cc: James Taft, Association of State Drinking Water Administrators
Steve Via, American Water Works Association

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Suggested Directions for Homeowner Tap Sample Collection Procedures

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your State, and is being accomplished through the cooperation of homeowners and residents.

Collect samples from a tap that has not been used for a minimum of 6 hours. Because of this requirement, the best time to collect samples is either early in the morning or in the evening upon returning from work. Be sure to use taps that have been in general use by your household for the past few months. The collection procedure is described in more detail below.

1. Prior arrangements will be made with the customer to coordinate the sample collection event. Dates will be set for sample kit delivery and pick-up by water department staff.
2. There must be a minimum of 6 hours during which there is no water used from the tap the sample is taken from and any taps adjacent or close to that tap. The water department recommends that either early mornings or evenings upon returning home are the best sampling times to ensure that the necessary stagnant water conditions exist.
3. A kitchen or bathroom cold-water faucet is to be used for sampling. If you have water softeners on your kitchen taps, collect your sample from the bathroom tap that is not attached to a water softener, if possible. **Do not remove the aerator prior to sampling.** Place the opened sample bottle below the faucet and gently open the cold water tap. Fill the sample bottle to the line marked "1000-mL" and turn off the water.
4. Tightly cap the sample bottle and place in the sample kit provided. Please review the sample kit label at this time to ensure that all information contained on the label is correct.
5. ***IF ANY PLUMBING REPAIRS OR REPLACEMENT HAS BEEN DONE IN THE HOME SINCE THE PREVIOUS SAMPLING EVENT, NOTE THIS INFORMATION ON THE LABEL AS PROVIDED. ALSO IF YOUR SAMPLE WAS COLLECTED FROM A TAP WITH A WATER SOFTENER, NOTE THIS AS WELL.***
6. Place the sample kit outside of the residence in the location of the kit's delivery so that department staff may pick up the sample kit.
7. Results from this monitoring effort will be provided to participating customers when reports are generated for the State. However, if excessive lead and/or copper levels are found, immediate notification will be provided (usually 10 working days from the time of sample collection).

Call _____ at _____ if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT

Water was last used: Time _____ Date _____
Sample was collected: Time _____ Date _____

I have read the above directions and have taken a tap sample in accordance with these directions.

Signature _____ Date _____