

Date Signed: March 19, 2001

MEMORANDUM

SUBJECT: Use of Point of Use and Point of Entry Devices

FROM: William Diamond, Director  
Drinking Water Protection Division

TO: Wolfgang Brandner, Chief  
Drinking Water and Ground Water Branch, Region VII

I am writing in response to your request for information on appropriate use of Point of Use (POU) and Point of Entry (POE) devices for drinking water treatment. Your request was prompted by an inquiry from the Department of Regulation and Licensure in the Nebraska Department of Health and Human Services (NHHS). NHHS asked the following question:

*Is the use of POU/POE devices acceptable for meeting maximum contaminant levels (MCLs)? If yes, does each faucet in the house/business need a POU device or is it sufficient to designate one faucet in the house/business for drinking as is often done in homes/businesses utilizing a water softener and a put POU device on that faucet?*

We understand that NHHS is interested in this issue for four contaminants at a system serving approximately 8,000 people. These are Copper, Nitrate, Arsenic and Uranium. We address each of these specifically below after a general discussion of POU and POE devices.

EPA has designated POU and POE devices that are appropriate for use in treating a range of contaminants. EPA believes that these devices, when owned and maintained by the water system, can provide adequate protection of public health from contaminants with chronic health effects. A listing of devices and the contaminants they will remove is contained in EPA's Small System Compliance Technology List<sup>1</sup>.

EPA does not, in general, view POU and POE devices as appropriate for treatment of contaminants which can cause acute adverse health effects after short term exposures. To

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<sup>1</sup>*Small System Compliance Technology List for the Non-Microbial Contaminants Regulated before 1996. EPA 815-R-98-002.*

prevent acute health effects, EPA believes it is appropriate to establish multiple barriers against contamination. A failure of a POU or POE device could lead to immediate illness. In fact, for microbial contaminants, use of POU devices is specifically prohibited by the Safe Drinking Water Act (SDWA). We believe that use of POU and POE devices to treat for any contaminant with acute health effects should be minimized. Where such devices are used, the time frame of their use should generally be short and be an interim measure while other long-term solutions are pursued.

The NNHS asked if “each faucet in the house/business needs a POU device or if it is sufficient to designate one faucet in the house/business for drinking.” Installing a POU at one tap designated for drinking and cooking is acceptable for removal of certain contaminants; however, in any situation where POU devices would be allowed to treat for contaminants with acute health effects based on ingestion, POU devices should be installed on all taps that may be used for drinking and cooking.

### POU Devices for Treatment of Copper

While we do not encourage systems to install POU devices as a long-term solution for exceedance of the copper standard under the Lead and Copper Rule (LCR), POU devices are an acceptable alternative compliance technology under some circumstances. We understand that some states may believe these devices are the best solutions for some small water systems in unique situations. Although use of POU devices is a viable compliance option, the burden of ensuring their effectiveness and maintaining them make these devices an unattractive option. If POU devices are installed, the devices should be installed at all taps that may be used for drinking and cooking due to the potential acute health effects of copper. If taps are left untreated, customers would be exposed to a risk to health at untreated taps. An example of customers who may be exposed is children, who often drink from bathroom faucets. Moreover, if some taps do not have POU devices installed, our regulations, as discussed below, would require the system to conduct its tap sampling at those untreated taps, to the extent they are available.

EPA regulations and guidance do allow POU devices for treatment of copper in some cases. The LCR allows state to grant exemptions to public water systems using POU devices to avoid unreasonable risk to health for lead and copper.<sup>2</sup> In addition, the 1996 SDWA Amendments directed EPA to identify alternative compliance options for drinking water systems serving fewer than 10,000 persons. In its Small System Compliance Technology List, EPA has identified POU devices as a viable compliance technology for copper.

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<sup>2</sup>Such exemptions are no longer available to systems serving more than 3,300 persons because of the compliance time frame of the rule. The availability of exemptions in some states depends on whether states have adopted the most current regulations covering exemptions.

### POU Devices for Treatment of Copper - Monitoring to Demonstrate Compliance

The LCR establishes a monitoring protocol for assessing whether water systems are delivering water with corrosive properties that results in elevated concentrations of lead and copper. EPA believes it is appropriate for water systems to use the provisions of this monitoring protocol in 40 CFR 141.81(b)(1) to demonstrate compliance if the water systems have installed an alternative approach such as POU for reducing levels of lead and copper. Under 40 CFR 141.81(b)(1), “a small or medium-size water system is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six month monitoring periods...” Once a system satisfies this section, no further corrosion control treatment is necessary, unless future monitoring shows an action level exceedance. If a system that has achieved lower levels due to a form of treatment (e.g., centralized corrosion control or installation of point of use devices), the system must continue to maintain and operate such treatment.

Under typical circumstances, EPA does not believe that conducting tap monitoring for lead or copper at taps where a POU device is installed is appropriate because the levels at the tap will have been affected by the device and would, therefore, not be a good indicator of whether water delivered by the system is causing corrosion in user’s pipes in the system generally. For this reason, the lead and copper regulation states that “sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.” 40 CFR 141.86(a)(1). The LCR also establishes a three-tiered system for prioritizing which sites should be selected for sampling based upon the potential for sites to contribute corrosion by-products to drinking water but provides that “any community water system with representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.” 40 CFR 141.86(a)(5).

While the regulations generally proscribe sampling at sites where POU devices are installed, in the unusual circumstances where a system had POU devices installed at all drinking water taps, we do not read the regulation as precluding tap sampling. Rather, if the only taps available for sampling are taps at which POU devices are installed, sampling should occur at the appropriate number of such taps, which would in fact be representative of circumstances throughout the system. If the levels are below the action levels for lead and copper for two consecutive six-month monitoring periods, the system is deemed to have optimized corrosion control, pending results of future sampling and continued proper operation and maintenance of the devices.

### POE Devices of Treatment of Lead and Copper

EPA does not consider POE devices that remove lead and copper from water an acceptable alternative compliance option because corrosive water may leach lead and copper

from plumbing and fixtures within the building - - after water passes through the POE device.<sup>3</sup> Additional chemical treatment of the water would be necessary after the water passed through the POE which would increase the cost of the system.

#### POU and POE Devices for Treatment of Nitrate

These devices are not appropriate for treatment of nitrate because of nitrate's acute and potentially fatal health effects.

#### POU and POE Devices for Treatment of Uranium

EPA identified, in the 2000 Radionuclides Rule<sup>4</sup>, POU compliance technologies for Uranium. No POE technologies were identified.

#### POU and POE Devices for Treatment of Arsenic

EPA identified, in the 2001 Arsenic Rule<sup>5</sup>, POU and POE compliance technologies for Arsenic.

#### Management of POU and POE Devices

\_\_\_\_\_ If POU and POE devices are used by a water system, they must be managed as required by the SDWA at section 1412(b)(4)(E)(ii). For example, the water system is responsible for installing and maintaining POU devices in customer's homes and other buildings served by the system.

If you have any questions or comments, or would like to discuss this issue further, please call me at (202) 260-7077 or have your staff call Ron Bergman at (202) 260-6187.

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<sup>3</sup>40 CFR 142.62(f) states the POE devices "can be used as a condition for granting an exemption from the source water and lead service line replacement requirements for lead and copper under sections 141.83 and 141.84 to avoid an unreasonable risk to health." (emphasis added.)

<sup>4</sup>National Primary Drinking Water Regulations; Radionuclides; Final Rule, December 7, 2000 (65 FR 76708) EPA-815-Z-00-006.

<sup>5</sup>National Primary Drinking Water Regulations: Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring; Final Rule, January 22, 2001 (66 FR 6976 EPA-815-Z-01-001).

cc: Cynthia Dougherty  
Steve Neugeboren  
Carrie Wehling  
Karen Clark  
Kate Anderson