

make the LCR easier to implement. In particular, they recommended that the following three LCR-related research areas be incorporated into EPA's overall research strategy:

1. How well LCR monitoring results correlate to actual exposure and the effectiveness of the rule in protecting public health.
2. Whether there is a correlation between water quality at indoor and outdoor taps.
3. What effect the ban on lead in fixtures has had on lead levels and whether changes need to be made based on this ban.

The commenters explained their rationale for recommending that the Agency determine if a correlation could be established between indoor and outdoor water quality. They stated that a major weakness of the LCR is that sample integrity may be compromised by allowing customers to collect water samples. If the Agency could establish such a correlation, the LCR could be revised to allow water system operators to collect samples from outdoor taps; thereby removing the need for customer-collected sampling.

*EPA Response:* EPA recognizes that the LCR is a challenging rule that requires difficult solutions to implement, but continues to believe that the public health objective addressed by the rule is as important and essential today as it was when the rule was first promulgated. Since the Agency promulgated the revisions to the LCR in January 2000 (65 FR 1950, January 12, 2000 (USEPA, 2000)), the Agency has received no significant new information that would support a revision. However, the Agency recognizes that more research would be useful to obtain additional information that could be utilized to address some of the issues associated with the implementation of this rule. For this reason, EPA has revised its rationale for not revising the NPDWR for lead and placed it in the data gaps category. Although the Agency continues to believe that the NPDWR for copper belongs in the risk assessment in process category at the present time, EPA will also consider copper-related risk management and implementation issues as a part of any LCR-related research plans. The Agency is committed to working with stakeholders to support and coordinate identification and prioritization of LCR-related research needs. Until this research is completed, EPA believes it is premature to consider revisions to the LCR; as a result, revision of the LCR is not appropriate at this time.

The Agency believes that understanding the possible correlation

between monitoring results and actual rates of exposure and public health protection is a valid issue. However, EPA recognized during the initial regulatory development of the LCR that a significant effort would be necessary to provide a statistically valid number and frequency of samples for an exposure assessment. The Agency thus adopted an alternative approach which specified a monitoring scheme that sought to " \* \* \* assure that systems are performing 'optimal corrosion control' in part by requiring systems to conduct comprehensive tap sampling at homes specifically targeted for their potential to contain elevated levels of lead and copper" (56 FR 26460 at 26514, June 7, 1991 (USEPA, 1991b)). One issue in assessing exposure reduction resulting from the LCR is a determination of an exposure baseline. EPA does not have a lot of data against which to measure changes in exposure that have occurred as a result of rule implementation. For these reasons, EPA believes that there is still insufficient information to change the basic monitoring approach adopted in the original rule, but recognizes that additional research may be useful.

Research on whether a correlation exists between the water quality at indoor taps and water quality at outdoor taps is a very complex issue. Several variables potentially affect whether a reliable correlation exists between indoor and outdoor taps. These variables include: standing time within the system; contact time with the building plumbing; and the content of the interior plumbing. These variables, coupled with the fact that lead levels from building-to-building can be highly site-specific, make a correlation between indoor and outdoor taps difficult to establish. EPA continues to believe that focusing on the point of delivery to the customer most closely links the data collected to the water quality consumed by the customer.

EPA recognizes the commenter's concerns regarding the integrity of samples collected by drinking water customers. To date, however, the Agency has not been able to identify an acceptable alternative to monitoring at the consumer's tap that can produce results equivalent to those obtained at the point of consumption in terms of ensuring adequate public health protection.

Regarding the commenter's third recommendation, EPA will consider this research need as part of the Agency's overall drinking water research planning process.

*b. Relaxing the Monitoring Requirements.* Three commenters recommended that water systems be

allowed to conduct water quality parameter (WQP) monitoring in lieu of continued lead and copper tap monitoring. One of these commenters added that this should be allowed once the system has demonstrated that it does not have a lead problem. This commenter also stated that the new requirements to use lead-free solder and plumbing fixtures should preclude problems with lead. Two commenters noted the difficulty that water systems are having maintaining their current sampling pool because homeowners no longer want to participate in the LCR monitoring program. One of these commenters recommended using WQP results to ensure corrosion control treatment is being adequately maintained and to stop lead and copper monitoring after three to five years. The commenter added that once the system ceases lead and copper monitoring, it can use public education to supplement continuing corrosion control, and can use coupons to demonstrate that corrosion rates meet accepted standards.

*EPA Response:* While EPA is sensitive to the difficulties associated with the monitoring requirements of the LCR, the Agency is also concerned about the implications of reduced or discontinued monitoring. Significant treatment changes or water chemistry disturbances (such as new water sources, major pH/coagulation changes, disinfectant changes, or seasonal water/treatment changes) can influence the effectiveness of corrosion control, which in turn will require appropriate adjustments of treatment. Current regulations require water systems to continue monitoring lead and copper levels to assure that water quality changes adversely affecting the presence of these contaminants in the drinking water are detected and to assure that appropriate adjustments to maintain optimal corrosion control are made. Proper process control, including water quality and corrosion inhibitor residual concentration monitoring in the distribution system, is the key to making any corrosion control or other treatment work, and assure the continuation of proper water quality. However, EPA recognizes that some changes might be justified in the future based on new, scientifically valid, information and/or research. EPA is considering aspects such as the implications of simultaneous treatment modifications on water quality, including lead and copper control, in its research planning. EPA is not yet able to determine whether the outcome of such research will provide a basis for modifications to the LCR treatment or monitoring