

presents the basis for these requirements.

a. *Sampling intervals for quarterly monitoring.* Today's proposal requires systems conducting routine quarterly monitoring to sample approximately every 90 days. This provision modifies the approach used in the 1979 TTHM rule and the Stage 1 DBPR, which requires certain systems to conduct monitoring based on calendar quarters.

When systems are required to monitor based on calendar quarters, systems can choose to cluster samples during times of the year when DBP levels are lower (DBPs tend to form more slowly in colder water temperatures). For example, a system could sample in December (at the end of the fourth quarter) and again in January (at the beginning of the first quarter) when the water is the coldest and sample in April (at the beginning of the second quarter) and September (at the end of the third quarter) at either end of the hot summer months.

To address the concern with systems not sampling during months with the highest DBP levels, EPA is proposing to require systems to monitor during the month of highest historical DBP concentrations and require that systems monitor approximately every 90 days. EPA believes that this new monitoring strategy will improve public health protection because systems will be required to monitor when high DBP levels are expected, and the LRAA will better reflect actual exposure during the year.

b. *Reduced monitoring frequency.* Today's proposal contains provisions allowing reduced routine monitoring when certain criteria are fulfilled (shown in Table V-5 and V-7). EPA believes that more stringent standards are necessary to ensure public health protection when systems reduce the frequency of their DBP monitoring. Under the reduced monitoring provisions, systems must collect samples during the months of highest DBP occurrence. For systems sampling annually under the reduced monitoring provisions, EPA believes that public health protection would likely be ensured throughout the year if the high values are known to be below 0.060 mg/L for TTHM and 0.045 mg/L for HAA5. Systems monitoring every three years must maintain single samples under 0.040 mg/L for TTHM and 0.030 mg/L for HAA5 to ensure adequate public health protection over the course of the three years.

c. *Different IDSE sampling locations by disinfectant type.* Today's proposal contains different requirements for IDSE monitoring locations based on the

disinfectant residual used in the distribution system. Systems that use chloramines are required to select more near-entry point monitoring sites for the IDSE than chlorinated systems of similar size and source water type. This is due to differences in DBP formation under chloraminated and chlorinated conditions. Chloramine residuals are more stable than chlorine residuals and do not react as readily with organic compounds in the water. Based on evaluation of Information Collection Rule data, DBP concentrations in chloraminated systems vary less throughout the distribution system than in chlorinated systems. HAA5, in particular, can peak at or near the entry point to the distribution system in a chloraminated system (USEPA 2003o).

d. *Population-based monitoring requirements for certain consecutive systems.* While the Advisory Committee recommended basic principles for how consecutive systems should be regulated, it did not recommend how EPA should explicitly address some of the unique situations that pertain to consecutive systems. In this regard, consecutive systems that purchase all of their finished water year-round are different than other systems in that they do not have a treatment plant. Rather, these systems often receive water from multiple wholesale systems or through multiple consecutive system entry points on a seasonal or intermittent basis. Because a plant-based monitoring approach (which counts treated water distribution system entry points from different entities as plants) would be very difficult to implement for consecutive systems that purchase all of their finished water year-round, EPA is proposing a population-based approach for such systems.

Under a population-based approach, the frequency of monitoring is based on the population served and remains the same regardless of how many entities are providing water to the consecutive system at different times of the year. The population categories and associated monitoring frequencies in Tables V-4 and V-6 for IDSE and Stage 2B routine monitoring reflect EPA's consideration that distribution system complexity generally increases as the population served grows. Increasing distribution system complexity warrants more monitoring to represent DBP occurrence.

EPA developed the proposed population-based monitoring requirements in accordance with certain guidelines. These are stated as follows:

—The sampling frequency for surface water systems should be greater than

for ground water systems. The basis for this is that, in general, systems using surface water or mixed source water supplies are likely to experience higher and more variable DBP occurrence over time than systems using ground water exclusively.

- Smaller systems should be allowed to monitor less frequently per location than larger systems because their distribution systems are generally less complex and monitoring costs on a per capita basis are much higher.
- For systems using surface water, the ratio of IDSE sample locations to the number of routine sample locations required for Stage 2B should be approximately 2:1 (consistent with Advisory Committee recommendations for plant-based monitoring). IDSE sampling is intended to identify distribution system locations with high DBP levels and should, therefore, be more thorough than routine monitoring.
- Because ground water systems have much less variable DBP levels within the distribution system than surface water systems (see section IV), a smaller number of additional IDSE monitoring locations is warranted.
- Distribution system sampling locations should be approximately consistent with the proposed plant-based approach as recommended by the Advisory Committee. This will capture the locations with the high TTHM and HAA5 LRAs identified in the IDSE, but also include Stage 1 compliance locations with high TTHM and HAA5 for historical tracking.

Consistent with the first two guidelines, the proposed population-based monitoring requirements maintain the same monitoring frequency per sample location as proposed under the plant-based approach. The following subsection provides further discussion of the population-based approach as it might apply to all systems.

3. Request For Comment

EPA is requesting comments on the proposed monitoring requirements. This subsection begins with a list of specific questions related to the proposed requirements for IDSE and Stage 2B monitoring. This is followed by a discussion of issues associated with plant-based monitoring requirements and a request for comment on potential approaches to address these issues, including the extension of population-based monitoring requirements to all systems under the Stage 2 DBPR.

a. *Proposed IDSE and Stage 2B monitoring requirements.* EPA is