



Fact Sheet: Disinfection Profiling and Benchmarking

The Interim Enhanced Surface Water Treatment Rule (IESWTR) requires certain public water systems (PWSs) to evaluate their disinfection practices and work with the state to assure there are no unintended reductions in microbial protection

Is your PWS affected?

Your PWS is affected if it is a surface water or GWUDI* system that—

1. Serves 10,000 or more people; and,
2. Has Total Trihalomethanes ≤ 0.064 mg/L or Haloacetic Acids ≤ 0.048 mg/L.

The process consists of the following 3 steps:

- Ø Determining if a PWS must develop a disinfection profile—§141.172 (a)
- Ù Developing the disinfection profile—§141.172 (b)
- Ú Calculating the disinfection benchmark and consulting with the state—§141.172 (c)

* Ground water under the direct influence (of surface water)

Ø Determining if a PWS Must Develop a Disinfection Profile

How can a PWS determine if it must develop a disinfection profile?

A PWS determines if it must establish a disinfection profile using 4 consecutive quarters of TTHM and HAA5 data. If the PWS has an annual average level of TTHM \leq 0.064 mg/L or an annual average level of HAA5 \leq 0.048mg/L, it must then develop a disinfection profile.

Alternatively, a PWS may choose to develop a disinfection profile and not collect these data.

How should a PWS collect TTHM and HAA5 data?

- ' Most PWSs serving 100,000 or more people have collected TTHM and HAA5 data under the **1996 Information Collection Rule (ICR)**. These systems must use these data (from calendar year 1998) to determine if they must profile, unless the state determines there is a more representative data set for them to use. PWSs must submit these data to the state no later than **December 1999** (Timeline Milestone **ä**).
- ' A PWS that has not collected data under the ICR but has 4 consecutive quarters of **TTHM compliance data and HAA5 occurrence data** may use these data to determine if it must profile. The PWS must submit these data to the state for approval no later than **April 1999** (Timeline Milestone **ä**).
- ' A PWS that has **no data or inadequate data** for TTHM and HAA5 should collect 4 consecutive quarters of data. The PWS should submit these data to the state and determine whether or not to develop a disinfection profile no later than **March 2000** (Timeline Milestone **ä**).

Which labs may conduct analyses for HAA5?

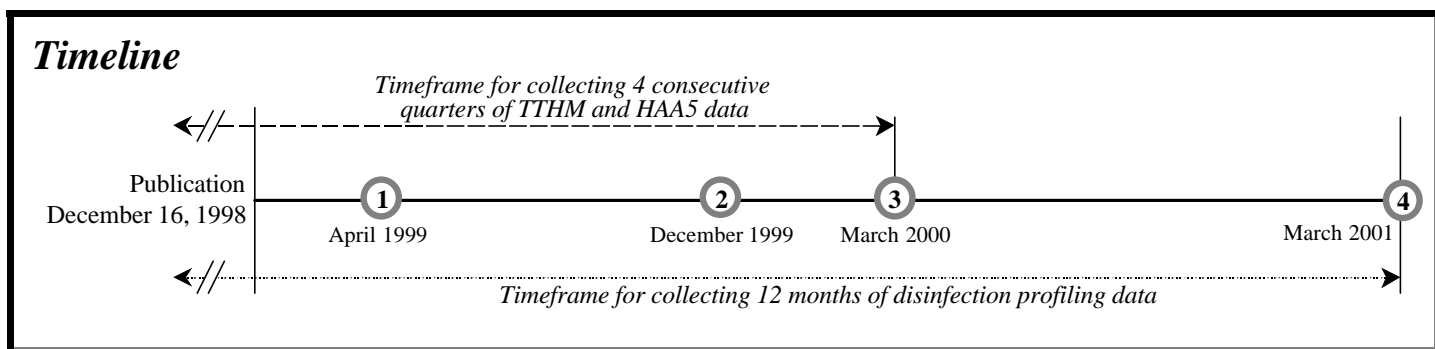
- ' Any lab that received approval under the 1996 ICR
- ' Any lab using ICR-approved methods

What are the monitoring requirements for TTHM and HAA5 data?

- ' TTHM and HAA5 data must be collected during the same quarter.
- ' For TTHM, samples must be taken in accordance with current TTHM monitoring requirements under 40 *CFR* 141.12 and 141.30. For HAA5, at least 4 samples must be taken per plant per quarter in accordance with **routine** monitoring requirements under 40 *CFR* 141.12 and 141.30.
- ' At least 25 percent of the samples for TTHM and HAA5 shall be taken at locations within the distribution system reflecting maximum residence time of the water in the system.
- ' The remaining 75 percent of the samples for TTHM and HAA5 shall be taken at representative locations in the distribution system, taking into account the number of people served, the different sources of water, and the different treatment methods employed.
- ' Analytical Methods and Handling Requirements

TTHM: EPA 502.2
EPA 524.2
EPA 551

HAA5: EPA 552.1
EPA 552.2
Std. 6251 B



Ü Developing the Disinfection Profile

How does a PWS develop a disinfection profile?

- ' The disinfection profile is developed by compiling daily *Giardia lamblia* log inactivations computed over a period of **12 months**. In addition, a disinfection profile for daily virus log inactivations must be developed for PWSs that use either chloramines or ozone for primary disinfection. The log inactivation values are calculated using daily measurements of operational data collected during peak-hour flows. This disinfection profiling must be completed no later than **March 2001** (Timeline Milestone ④).
- ' A PWS that has **3 years of existing operational data** may use these data to develop a disinfection profile as long as the state has determined that these data are substantially equivalent to data that would be collected under the IESWTR.
- ' The PWS must keep the disinfection profile on file to be reviewed during its Sanitary Survey.

Ü Calculating the Disinfection Benchmark and Consulting with the State

A PWS required to develop a disinfection profile that subsequently decides to make a significant modification to its disinfection practice must calculate a disinfection benchmark and consult with the state prior to implementing such a change. The state consultation process helps assure that the PWS will meet the new disinfection byproduct standards without compromising protection from microbial contaminants.

How does a PWS calculate a disinfection benchmark?

A disinfection benchmark is an indicator of disinfection effectiveness and depends upon the inactivation of *Giardia lamblia* (or viruses). The benchmark is determined by calculating the average daily inactivation value for each of 12 consecutive months. The lowest monthly average becomes the disinfection benchmark. If the system has data from more than 1 year, it repeats this calculation for each year. The benchmark is the average of the lowest month's value for each of the years.

What are significant modifications to a disinfection practice?

Significant modifications to disinfection practices include:

- ' Changes to the point of disinfection
- ' Changes to the disinfectant(s) used in the treatment plant
- ' Changes to the disinfection process
- ' Any other modification identified by the state

PLEASE LOOK INSIDE:

Your water system is expected to be affected by the requirements of the new IESWTR

More information can be obtained from:

- L Your state's primacy agency
- L The EPA Safe Drinking Water Hotline, Telephone: 1.800.426.4791



United States
Environmental Protection Agency
(4101)
Washington, DC 20460

Official Business
Penalty for Private Use
\$300

Bulk Rate
Postage and Fees Paid
EPA
G-35