

# Appendix I

## Disinfectants/Disinfection Byproducts Rule

### Monitoring Requirements

#### General Monitoring Requirements §141.132(a)

- \* Systems must take all samples during normal operation conditions.
- \* Systems may consider multiple wells drawing from the same aquifer as one plant for determining minimum number of samples required.
- \* Failure to monitor in accordance with plan is a monitoring violation.
- \* Failure to monitor will be treated as a violation for entire period covered by annual averages.
- \* Systems may only use data collected under §141.132(a), General Monitoring Requirements, to qualify for reduced monitoring.

#### ROUTINE MONITORING REQUIREMENTS

Requirement (reference)	Sampling location	Large surface water systems	Small surface water systems	Large ground water systems	Small ground water systems
TOC	Paired samples-only required for plants with conventional filtration treatment	1 paired sample per month per plant	1 paired sample per month per plant	NA	NA
TTHMs	25% in distribution system at maximum residence time, 75% at distribution system representative locations	4 samples per plant per quarter	1 sample per plant per quarter at maximum residence time. If population < 500, then 1 sample per plant per year	1 sample per plant per quarter at maximum residence time	1 sample per plant per year at maximum residence time during the warmest month
HAA5s	25% in distribution system at maximum residence time, 75% at distribution system representative locations	4 samples per plant per quarter	1 sample per plant per quarter at maximum residence time. If population < 500, then 1 sample per plant per year	1 sample per plant per quarter at maximum residence time	1 sample per plant per year at maximum residence time during the warmest month
Bromate	Distribution system entry point	1 sample per month per treatment plant using O <sub>3</sub> .	1 sample per month per treatment plant using O <sub>3</sub> .	1 sample per month per treatment plant using O <sub>3</sub> .	1 sample per month per treatment plant using O <sub>3</sub> .
Chlorite (daily)	Distribution system entry point	1 sample per day per treatment plant using ClO <sub>2</sub>	1 sample per day per treatment plant using ClO <sub>2</sub>	1 sample per day per treatment plant using ClO <sub>2</sub>	1 sample per day per treatment plant using ClO <sub>2</sub>

Chlorite (monthly)	Distribution system: 1 near first customer, 1 in the middle of the distribution system, and 1 at maximum residence time	3 samples per month	3 samples per month	3 samples per month	3 samples per month
Chlorine	Same points as coliform in TCR	Same times as coliform in the TCR	Same times as coliform in the TCR	Same times as coliform in the TCR	Same times as coliform in the TCR
Chlorine dioxide	Entrance to the distribution system	Daily sample per treatment plant using ClO <sub>2</sub>	Daily sample per treatment plant using ClO <sub>2</sub>	Daily sample per treatment plant using ClO <sub>2</sub>	Daily sample per treatment plant using ClO <sub>2</sub>
Chloramines	Same points as coliform in TCR	Same times as coliform in the TCR	Same times as coliform in the TCR	Same times as coliform in the TCR	Same times as coliform in the TCR

## Reduced Monitoring Requirements

Requirement (Reference)	Location for Reduced Sampling	Reduced Monitoring Frequency and Prerequisites
TOC	Paired samples	Subpart H systems-reduced to 1 paired sample per plant per quarter if 1) average TOC < 2.0 mg/l for 2 years; or 2) average TOC < 1.0 mg/l for 1 year.
TTHMs and HAA5s	In the distribution system at point with maximum residence time	<p><b>-Monitoring</b> cannot be reduced if source water TOC &gt; 4.0 mg/l.</p> <p><b>-Subpart H systems</b> serving 10,000 or more-reduced to 1 sample per plant per quarter if 1) system has completed at least 1 year of routine monitoring and 2) <i>both</i> TTHM and HAA5 running annual averages are no more than 40 µg/l and 30 µg/l respectively.</p> <p><b>-Subpart H systems</b> serving &lt;10,000 and ground water systems serving 10,000 or more-reduced to 1 sample per plant per year if 1) system has completed at least 1 year of routine monitoring and 2) <i>both</i> TTHM and HAA5 running annual averages are no more than 40 µg/l and 30 µg/l respectively. Samples must be taken during month of warmest water temperature. Subpart H systems serving &lt;500 may not reduce monitoring to less than 1 sample per plant per year.</p> <p><b>-Ground water systems</b> serving &lt; 10,000-reduced to 1 sample per plant per 3 year period if 1) system has completed at least 2 years of routine monitoring and <i>both</i> TTHM and HAA5 running annual averages are no more than 40 µg/l and 30 µg/l respectively or 2) system has completed at least 1 year of routine monitoring and <i>both</i> TTHM and HAA5 annual samples are no more than 20 µg/l and 15 µg/l, respectively. Samples must be taken during month of warmest water temperature.</p>
Bromate	Distribution system entry point	1 sample per quarter per plant using O <sub>3</sub> , if system demonstrates 1) average raw water bromide <0.05 mg/l (based on annual avg of monthly samples).
Chlorite	Distribution system: 1 near first customer, 1 in distribution system middle, and 1 at maximum residence time	System may reduce routine distribution system monitoring from monthly to quarterly if the chlorite concentration in all samples taken in the distribution system is below 1.0 mg/L for a period of one year.
Chlorine, Chlorine dioxide, and Chloramines	NA	Monitoring may not be reduced.

