

**567—41.9(455B) Special monitoring.**

**41.9(1) Sodium special monitoring.** Suppliers of water for CWSs shall collect and have analyzed one sample per source or plant to determine the sodium concentration in the distribution system. Systems utilizing multiple wells that draw raw water from a single aquifer may, with departmental approval, be considered as one source for determining the minimum number of samples to be collected. Sampling frequency and approved analytical methods are as follows:

*a. SW systems.* Systems utilizing a SW source, in whole or in part, shall monitor for sodium at least once annually at the SEP.

*b. GW systems.* Systems utilizing GW sources shall monitor at least once every three years at the SEP.

*c. Increased monitoring.* Suppliers may be required to monitor more frequently where sodium levels are variable or if certain types of treatment are used, such as cation exchange softening.

*d. Analytical methodology.* Sodium analyses shall be performed in accordance with 41.3(1)“e”(1).

*e. Reporting.* The sodium level shall be reported to the public by at least one of the following methods:

(1) The CWS shall notify the appropriate local public health officials of the sodium levels by written notice by direct mail within three months of receipt of the analytical results. A copy of each notice required by this subrule shall be sent to the department within ten days of its issuance.

(2) In lieu of the reporting requirement in this paragraph, the CWS shall include the sodium level in its annual consumer confidence report, pursuant to 567—subparagraph 40.7(4)“a”(11).

*f. CWSs using cation exchange treatment.* CWS utilizing cation exchange treatment shall collect one sodium sample of the finished water per year after all treatment. Analysis and reporting must be done in accordance with this subrule.

**41.9(2) Ammonia special monitoring.** Ammonia in GW is a precursor to the development of nitrite and nitrate in a drinking water system, which are both contaminants with acute health effects. This subrule lists the ammonia analytical methodology, sample preservation requirements, and holding times to be used for drinking water samples.

*a. Analytical methodology.* Analyses for ammonia shall be performed in accordance with the following methodology, with a detection limit of 0.1 mg/L ammonia as N:

**Analytical Methodology for Ammonia**

Methodology	EPA <sup>1</sup>	SM (20th edition)	ASTM	USGS <sup>2</sup>	Other
Manual distillation at pH 9.5 <sup>4</sup> , followed by:	350.2	4500-NH3 B			973.49 <sup>3</sup>
Titration	350.2				
Manual electrode	350.3	4500-NH3 D or E	D1426-93(B)		
Automated phenate	350.1	4500-NH3 G		I-4523-85	
Automated electrode					See note 5

<sup>1</sup>“Methods for Chemical Analysis of Water and Wastes,” EPA-600/4-79-020, Revised March 1983 and 1979 where applicable.

<sup>2</sup>Fishman, M.J., et al., “Methods for Analysis of Inorganic Substances in Water and Fluvial Sediments,” U.S. Department of the Interior, Techniques of Water—Resource Investigations of the USGS, Denver, CO, Revised 1989, unless otherwise stated.

<sup>3</sup>“Official Methods of Analysis of the Association of Official Analytical Chemists,” 15th edition, 1990.

<sup>4</sup>Manual distillation is not required if the samples are very low in turbidity; however, manual distillation should be used whenever matrix interferences could be present in the sample, and will be required to resolve any controversies.

<sup>5</sup>Ammonia, Automated Electrode Method, Industrial Method Number 379-75 WE, February 19, 1976, Bran & Luebbe (Technicon) Auto Analyzer II, Bran & Luebbe Analyzing Technologies, Inc., Elmsford, NY 10523.

*b. Sample preservation and holding time.* Systems must collect a 500 mL grab sample into a plastic or glass bottle. The sample must be acidified at the time of collection to a pH of less than 2 by the addition of sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) and refrigerated at 4 degrees Celsius. The sample must be analyzed within 28 days. If the sample is analyzed within 24 hours of collection, the sample acidification is not required.

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