**567—41.11(455B) Special monitoring.**

**41.11(1)** *Special monitoring for sodium.* Suppliers of water for community public water systems shall collect and have analyzed one sample per source or plant, for the purpose of determining 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. Surface water systems.* Systems utilizing a surface water source, in whole or in part, shall monitor for sodium at least once annually at the entry point to the distribution system.

*b. Groundwater systems.* Systems utilizing groundwater sources shall monitor at least once every three years at the entry point to the distribution system.

*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.* Analyses for sodium 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 community public water supply 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 of 41.11(1)*"e"*(1), the community public water supply shall include the sodium level in its annual consumer confidence report, pursuant to 567—paragraph 42.3(3)*"c"*(1)"12."

*f. CWSs using cation exchange treatment.* Community water systems which utilize cation exchange treatment are required to collect one sodium sample of the finished water per year after all treatment. Analysis and reporting must be done in accordance with 41.11(1)*"d"* and *"e."*

**41.11(2)** *Special monitoring for ammonia.* Ammonia in the groundwater is a precursor to the development of nitrite and nitrate in a drinking water system. Both nitrite and nitrate are 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:

| Methodology | EPA[1] | Standard Methods (20th edition) | ASTM | USGS[2] | Other |
|---|---|---|---|---|---|
| Manual distillation at pH 9.5[4], followed by: | 350.2 | 4500-NH3 B | | | 973.49[3] |
| Titration | 350.2 | 4500-NH3 C | | | |
| 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] |

[1] "Methods for Chemical Analysis of Water and Wastes," Environmental Protection Agency, EPA-600/4-79-020, Revised March 1983 and 1979 where applicable.

[2] 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 U.S. Geological Survey, Denver, CO, Revised 1989, unless otherwise stated.

[3] "Official Methods of Analysis of the Association of Official Analytical Chemists," 15th edition, 1990.

[4] 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.

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

*b. Sample preservation and holding time.* The system 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 ($H_2SO_4$) 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.