UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
GUIDANCE FROM HOTLINE COMPENDIUM

WSG H9
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SUBJECT: Determination of Vulnerability to VOCs

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A State department of health intends to develop and implement regulations for public water suppliers in their state. The State has primacy for the National Primary Drinking Water Regulations (NPDWRs) and, specifically, is involved in the development of regulations for the monitoring of volatile synthetic organic compounds (VOCs), as found in 40 CFR Section 141.24 (52 FR 25712).

Pursuant to Section 141.24, each State must determine the vulnerability of each public water system, based upon the assessment of five factors [Section 141.24(g)(8)(iv)]: 1) previous monitoring results; 2) number of persons served by the public water system; 3) proximity of a smaller system to a larger system; 4) proximity to commercial or industrial use, disposal, or storage of volatile synthetic organic compounds; and 5) protection of the water source. If a public water system has several sources of drinking water, does the State have the ability to determine/designate vulnerability on a source-by-source basis, or must the State consider the whole system "vulnerable," if one of the sources is vulnerable?

Response:

EPA's direct answer to the question is -- no, a State does not have to classify an entire system vulnerable if any one of its sources is vulnerable.

The concept of vulnerability was conceived to allow States to tailor monitoring frequencies to differing needs. A water supply which is not vulnerable to contamination by certain chemicals should not need to monitor for those chemicals as frequently as systems which are vulnerable. Some systems may have sources that are located in very different places/locations, and there may be a significant difference in the amount of vulnerability to potential sources of VOC contamination.

It would be consistent with this concept to allow for tailoring of monitoring frequencies to individual sources as well, if the conditions or configurations of the water supply and the method of sample collection make such tailoring appropriate. An obvious example is the case where a single water system has several sources with separate distribution systems. It would be logical to allow the vulnerability of each source to dictate the monitoring frequencies.

In most cases, however, such distinct separation will not occur. In those instances, where multiple sources feed into a common distribution system, the entire water system will be at risk of contamination from any one of the sources. In such systems the structure of the sample collection program will control whether vulnerability determination by source is appropriate.

a) In instances where the individual sources are monitored prior to mixing with any other sources, then the vulnerability of each source and the results of previous analyses can be used to determine the monitoring frequency for that source. Different sources within a single system may have different monitoring schedules.

b) In instances where monitoring is done after the sources have combined, either before or after treatment, then vulnerability of the entire system is determined by the most vulnerable source. All sources within the system would have to monitor at the frequency specified for that "most vulnerable source."

It should be clear, however, that if VOCs are ever detected in any one source, and the water system does not have separate distribution systems, then the entire water system automatically becomes vulnerable under Section 141.24(g)(8)(v), and all sources must monitor at the accelerated frequency (quarterly). If VOCs ever exceed the MCL in any one source and the system does not have separate distribution systems, then the entire water system is out of compliance as specified in Section 141.24(g)(9).

Note: Rule citations are incorrect, since the Rule has been revised. However, the concepts are still up to date.