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Unregulated Contaminant Monitoring Regulation: Monitoring for List 1 Contaminants by Large Public Water Systems

Introduction

The Safe Drinking Water Act (SDWA) requires community water systems (CWSs) and non-transient, non-community water systems (NTNCWSs) that serve more than 10,000 persons (large systems) to monitor their water for the presence of unregulated contaminants. The purpose of this monitoring is to collect data to support the U.S. Environmental Protection Agency (EPA) Administrator's decisions regarding whether or not to regulate contaminants such as those on the Drinking Water Contaminant Candidate List to protect public health.

To implement this requirement, the U.S. EPA promulgated revisions to the Unregulated Contaminant Monitoring Regulations (UCMR). Published on September 17, 1999, and supplemented on March 2, 2000 and January 11, 2001, the UCMR specifies:

- Which public water systems (PWSs) must monitor
- How a randomly selected sample set of small PWSs will be chosen to monitor
- Which contaminants systems must monitor
- When, where, and how often samples must be taken
- Which laboratory methods are to be used for analyzing the samples
- What quality control procedures, in addition to those in the laboratory methods, must be followed
- What the requirements are for reporting the results of the monitoring
- What roles the States and Indian Tribes will play in implementing the monitoring program.

EPA has organized the contaminants on the UCMR (1999) List into three lists based on the availability of analytical methods to detect their presence in drinking water and the type of monitoring to be conducted: List 1, Assessment Monitoring, consists of 12 chemical contaminants for which standard analytical methods are available; List 2, Screening Survey, consists of 16 contaminants for which new analytical methods will be used; and List 3, Pre-Screen Testing, consists of 9 contaminants for which analytical methods are being researched. This fact sheet is concerned with List 1, Assessment Monitoring. Table 1 on the next page identifies the List 1 contaminants and their uses or environmental sources.

What Systems Must Monitor for List 1 Contaminants? (See §141.40(a)(1))

All large community and non-transient, non-community water systems that do not purchase all of their water from another system must conduct monitoring. Large systems serve more than 10,000 persons. If you are unsure of your status as a PWS, contact your State drinking water administrator or your EPA regional contact.

When and How Often Must Monitoring Occur? (See §141.40(a)(5))

The effective implementation date of the Assessment Monitoring requirement is January 1, 2001. Large systems must conduct Assessment Monitoring during any continuous 12-month period from January 1, 2001 to December 31, 2003. (See Table 2, below, for details.) At least one sample must be taken during a time when the water system is vulnerable to contamination.

Table 1: UCMR (1999) List 1 Contaminants and Their Uses or Sources		
Contaminant	**CASRN**	**Use or Environmental Source**
2,4-dinitrotoluene	121-14-2	Used in the production of isocyanate and explosives
2,6-dinitrotoluene	606-20-2	Used as a mixture with 2,4-dinitrotoluene (similar uses)
Acetochlor	34256-82-1	Herbicide used with cabbage, citrus, coffee, and corn crops
DCPA mono acid; DCPA di acid	887-54-7; 2136-79-0	Degradation products of DCPA, an herbicide used on grasses and weeds with fruit and vegetable crops. Both the DCPA degradates are measured and reported as a single analyte
4,4'-DDE	72-55-9	Degradation product of DDT, a general insecticide
EPTC	759-94-4	Herbicide used on annual grasses, weeds, in potatoes and corn
Molinate	2212-67-1	Selective herbicide used with rice, controls watergrass
MTBE	1634-04-4	Octane enhancer in unleaded gasoline
Nitrobenzene	98-95-3	Used in the production of aniline, which is used to make dyes, herbicides, and drugs
Perchlorate	14797-73-0	Oxygen additive in solid fuel propellant for rockets, missiles, and fireworks
Terbacil	5902-51-2	Herbicide used with sugarcane, alfalfa, and some fruit, etc.

From Where Must Samples be Taken? (See §141.40(a)(5))
Samples to be analyzed for the presence of unregulated chemical contaminants must be taken at the entry points to the distribution system, such as the representative Phase II/V sampling points specified by the State, unless otherwise directed by the State or EPA. If your State requires source water monitoring, inquire with your State or EPA drinking water program contact for further guidance.

Table 2: Assessment Monitoring by Type of Water Source	
Source Water Type	**Assessment Monitoring Frequency**
Surface Water	Four quarterly samples, taken as follows: Select either the first, second, or third month of a quarter and sample in that same month of each of four consecutive quarters[1] to ensure that one of these sampling events occurs during the vulnerable time[2]
Ground Water	Two times in a year, taken as follows: Sample during one month of the most vulnerable time[2] and during one month five-to-seven months earlier or later[3]

[1] "Select either the first, second, or third month of a quarter and sample in that same month of each of four consecutive quarters" means that you must monitor during each of the four months of either: January, April, July, October; February, May, August, November; or March, June, September, December.

[2] "Vulnerable time" means May 1 through July 31, unless the State or EPA informs you that it has selected a different period for sampling as your system's vulnerable time.

[3] "Sample during one month of the vulnerable time and during one month five-to-seven months earlier or later" means, for example that if you select May as your "vulnerable time" month to sample, then one month five to seven months earlier would be October, November or December of the preceding year, and one month five to seven months later would be either October, November or December of the same year.

How Are the Samples to be Analyzed? (See §141.40(a)(5) and Appendix A)
Samples are to be analyzed by State- or primacy agency- certified drinking water compliance monitoring laboratories, using methods according to the UCMR's quality control (QC) specifications. (For details, see the *Unregulated Contaminant Monitoring Regulation Analytical Methods and Quality Control Manual* [EPA 815-R-00-006] and its supplements.) Note that it is the water systems' responsibility to use State- or primacy agency- certified laboratories that employ the correct methods. If analyzing samples for perchlorate under the UCMR, labs are required to successfully participate in a special performance testing program (§141.40(a)(5)).

What Data Must be Reported to EPA? (See §141.35(d))
Analytical results that are reported must include the UCMR Data Elements listed in Table 3, at right. Many of these are QC measures and should be provided by the laboratory.

Table 3: UCMR Data Elements for Reporting Sample Results

Public Water System (PWS) Identification Number	Analytical Method Number
PWS Facility Identification Number – Identification Number and Sampling Point Type Identification	Sample Analysis Type
Sample Collection Date	Sample Batch Identification Number
Sample Identification Number	Minimum Reporting Level
Contaminant/Parameter	Minimum Reporting Level Unit of Measure
Analytical Results – Sign	Analytical Precision
Analytical Results – Value	Analytical Accuracy
Analytical Results – Unit of Measure	Spiking Concentration

How Are the Monitoring Data to be Reported to EPA? (See §141.35(e))
The PWS has several options for reporting monitoring data to EPA. It can instruct the laboratory that analyzed its samples to enter the results directly into the electronic template that the Agency will make available on the Office of Ground Water and Drinking Water Homepage on the World Wide Web. (EPA is developing several options for the electronic reporting by laboratories, including a web interface where data can be keyed in and the capability to upload data in batches using standard flat-file or XML formats. Further guidance and tutorials will be available soon.) The PWS can then review the results on-line and electronically indicate its approval to submit the data to EPA. As an alternative, a PWS can require that the laboratory receive its approval before posting analytical data on the EPA electronic reporting system. If the PWS determines that the laboratory lacks either the capability to report electronically to EPA or to provide data to the system prior to their submission to EPA without rekeying, the PWS may ask EPA whether an alternate reporting format may be used. The PWS also must submit the results to the State.

Are There Requirements for Notifying the Public?
Yes. Under the Consumer Confidence Report (CCR) Rule, as specified in 40 CFR §141.153(d), CWSs must report the monitoring results whenever unregulated contaminants are detected. CCRs are to be sent to all billing customers each year by July 1. (The CCR Rule does not apply to non-community water systems.) In addition, the Public Notification Rule (40 CFR §141.207), published on May 4, 2000 (65 FR 25981), requires PWSs to notify the public annually that the results of monitoring for unregulated contaminants are available. Therefore, CWSs and NTNCWSs must provide public notice if they are required to monitor for unregulated contaminants. Details on these reporting requirements can be found in the documents *Preparing Your Drinking Water Consumer Confidence Report* (EPA 816-R-99-002) and *Public Notification Handbook* (EPA 816-R-00-010). Both are available on the Web at www.epa.gov/safewater.

Where Can I Get More Information?
More information on the UCMR is available from the following sources:

- *Federal Register* notices of September 17, 1999 (64 FR 50556), March 2, 2000 (65 FR 11372), and January 11, 2001 (66 FR 2273).
- The EPA Office of Ground Water and Drinking Water Web Site (www.epa.gov/safewater/ucmr.html).
- *Unregulated Contaminant Monitoring Regulation Analytical Methods and Quality Control Manual* (EPA 815-R-00-006).
- *Supplement A to the Unregulated Contaminant Monitoring Regulation Analytical Methods and Quality Control Manual* (EPA 815-R-00-002).
- The Safe Drinking Water Hotline (800 426-4791).

EPA is developing additional guidance materials, so check the Office of Ground Water and Drinking Water Web Site often for the latest information about them.

Table 4, at right, lists UCMR contacts in the EPA regional offices and the Agency's Technical Support Center in Cincinnati, OH.

Table 4: EPA UCMR Contacts

Region	Contact	Telephone
Region 1	Chris Ryan	617 918-1567
Region 2	Robert Poon	212 637-3821
Region 3	Michelle Hoover	215 814-5258
Region 4	Janine Morris	404 562-9480
Region 5	Janet Kuefler	312 886-0123
Region 6	Andrew J. Waite	214 665-7332
Region 7	Stan Calow	913 551-7410
Region 8	Rod Glebe	303 312-6627
Region 9	Jill Korte	415 744-1853
Region 10	Gene Taylor	206 553-1389
Technical Support Center	Dan Hautman	513 569-7948