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Unregulated Contaminant Monitoring Regulation Reporting Guidance

Acknowledgments

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Section 1. Introduction

1.1 Statutory Background

The Unregulated Contaminant Monitoring Regulation (UCMR) established a program for monitoring contaminants that were not previously monitored by public water systems (PWSs) under provisions of the Safe Drinking Water Act (SDWA). Section 1445 of the SDWA, as amended in 1996, required the Environmental Protection Agency (EPA) to establish criteria for a revised monitoring program for unregulated contaminants. In the past, unregulated contaminant monitoring has been performed according to the program described in 40 CFR 141.40. The 1996 SDWA Amendments direct a substantially revised UCMR Program. The Amendments also required EPA to publish, by August 1999, a list of contaminants to be monitored under the revised UCMR. The National Drinking Water Contaminant Occurrence Database (NCOD) was also established by the 1996 Amendments to the SDWA and will be used to store and analyze data collected under the UCMR.

The revised UCMR program is one of the cornerstones of the sound science approach to future drinking water regulation. In fulfillment of the 1996 SDWA Amendments, the UCMR monitoring program is designed to support:

- development of the Drinking Water Contaminant Candidate List (a list of contaminants that EPA is considering for possible regulation);
- determinations by the Administrator regarding whether to regulate a contaminant; and
- development of future regulations.

The Agency promulgated revisions to the UCMR, which were published in the *Federal Register* on September 17, 1999 and supplemented on March 2, 2000. An additional supplement to the UCMR, the List 2 Rule, was finalized and published in the *Federal Register* on January 11, 2001. Together, these regulatory revisions cover:

- the frequency and schedule for monitoring, based on PWS size, water source, and likelihood of finding contaminants;
- a new, shorter list of contaminants for which PWSs will monitor;
- procedures for selecting and monitoring a nationally representative sample of small PWSs – those serving 10,000 or fewer persons;
- procedures for entering the monitoring data into the EPA database, as required under SDWA §1445.

1.2 Program Overview

The first component of the UCMR is Assessment Monitoring. This monitoring will be conducted by all of the approximately 2,800 large community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) serving more than 10,000 persons (except those large PWSs that purchase *all* of their water from another PWS), and by a statistically representative sample of 800 small CWSs and NTNCWSs serving 10,000 or fewer persons (except those small PWSs that purchase *all* of their water from another PWS). Assessment Monitoring will be conducted for the UCMR (1999) List 1 contaminants, for which analytical methods have already been developed and refined.

The second component of the UCMR includes the Screening Surveys. Each of the two Screening Surveys will be conducted at 120 large PWSs and at 180 small PWSs randomly selected from the pool of PWSs required to conduct Assessment Monitoring. Screening Survey monitoring will be conducted for the List 2 contaminants for which analytical methods have been developed, but may need further refinement before larger-scale monitoring is conducted.

The third component of the UCMR is Pre-Screen Testing, which may be conducted at a combined total of up to 200 large and small PWSs. States may be asked to nominate PWSs that are particularly vulnerable to the Pre-Screen Testing contaminants. Pre-Screen Testing may be conducted for some of the UCMR (1999) List 3 contaminants for which analytical methods are in the initial stages of development.

EPA has also selected 30 small PWSs to serve as Index Systems. These PWSs will conduct Assessment Monitoring each year of the 5-year UCMR cycle to provide additional programmatic information and data quality control. EPA (or EPA contractors) will collect data on temporal variations in contaminant occurrence, and on the environmental and operating conditions of these 30 small PWSs. The detailed information from the Index Systems, together with the monitoring data generated through general UCMR monitoring, will enable EPA to develop future regulations that better reflect the environmental characteristics and operating conditions of the approximately 65,000 small PWSs.

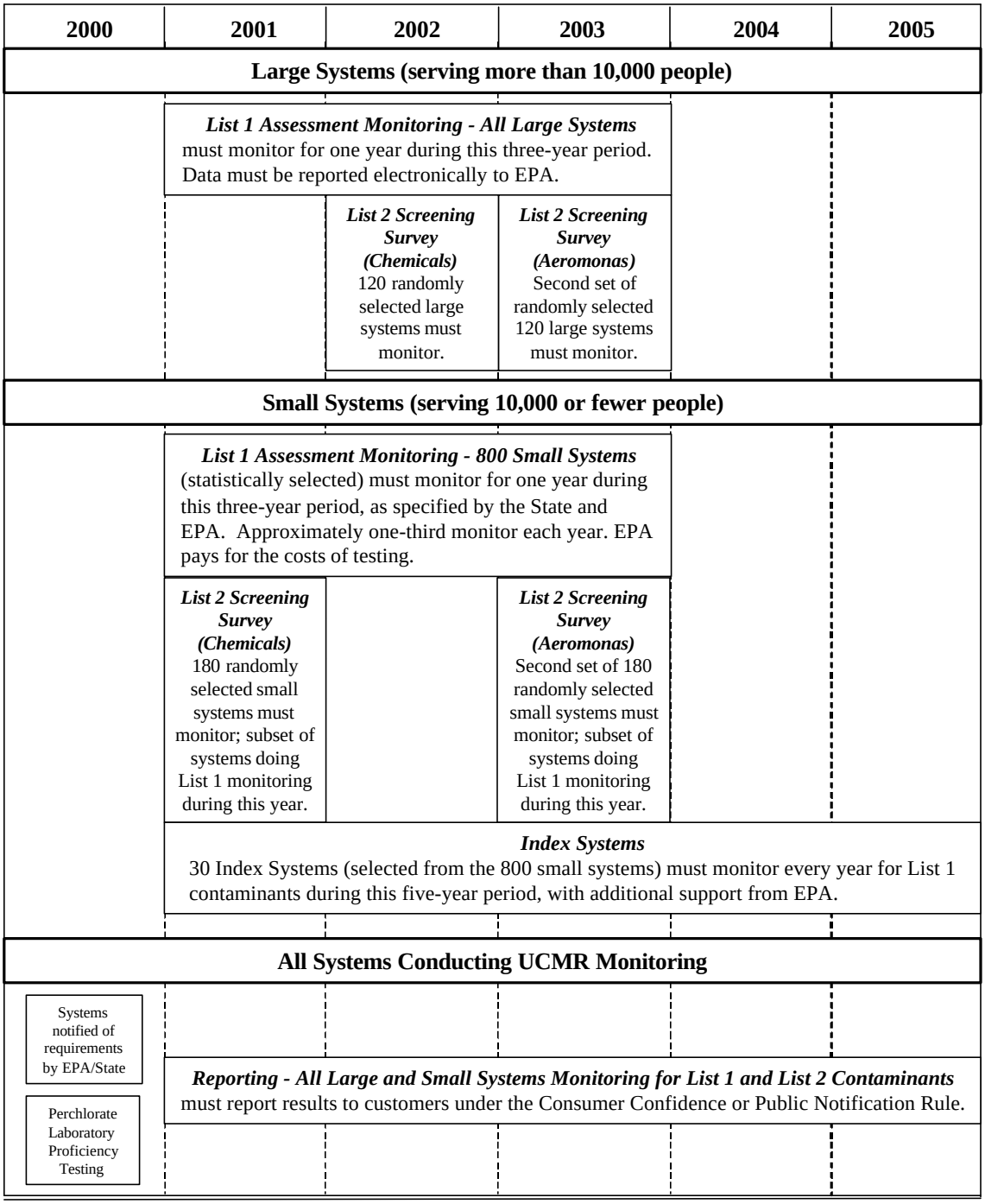
General monitoring schedules are related to the type of monitoring (Assessment Monitoring, Screening Survey, or Pre-Screen Testing) being conducted. Each participating PWS must conduct Assessment Monitoring for the List 1 contaminants for a 12-month period in the first three years (2001 through 2003) of the 5-year UCMR contaminant monitoring cycle (2001-2005), as per §141.40(a)(5). Randomly selected large PWSs will sample for the UCMR List 2 contaminants in 2002 (for chemical contaminants) and 2003 (for the microbiological contaminant, *Aeromonas*), while small PWSs will sample in 2001 and 2003, respectively. No timeframe has been established yet for Pre-Screen Testing for the UCMR (1999) List 3 contaminants, but it may be conducted in 2003 or 2004.

Required monitoring locations are also related to the type of monitoring (see §141.40(a)(5)). Assessment Monitoring samples must be collected at the entry point(s) to the distribution system unless otherwise specified by the State or EPA.[1] Samples for the first Screening Survey (for the List 2 chemicals) must always be collected at the entry point(s) to the distribution system (source water samples are not permitted). Samples for the second Screening Survey, for *Aeromonas*, will be collected at the three locations in the distribution system that represent: a midpoint location with typical

[1] Note that systems may sample raw water sources for UCMR (1999) List 1 contaminants if this is the compliance monitoring point required by the State. However, if samples are collected from source (raw) water, and any of the List 1 contaminants are detected, then source water monitoring must be completed for the indicated timeframe, *and* the PWS must also conduct sampling over the next twelve month period at the entry point to the distribution system that is representative of the affected source water for the contaminant(s) found.

disinfectant residual levels, a point located furthest from the entry point, and a location with the lowest disinfectant residual. Figure 1 provides a summary of the UCMR three-tiered monitoring approach, and shows the implementation timeline of UCMR activities.

Figure 1: UCMR (1999) Implementation Timeline



1.3 Purpose and Organization of this Document

This document provides guidance on reporting results from UCMR monitoring for the public water systems, analytical laboratories, States, and EPA offices participating in the UCMR Program. In addition to this guidance, EPA is developing an instructional four volume document, to which the reader can refer for step-by-step instructions for using the data system (see Appendix D for further description of the instructional document).

The remainder of this guidance document is organized into two major sections: Section 2 provides a detailed discussion of the information that participating PWSs (and their laboratories) must report to EPA and how these data are to be reported. Section 3 describes the reporting obligations of PWSs to their consumers, as specified by the Consumer Confidence Report and Public Notification Rules.

Several appendices are included with this document for further reference.

The SDWA provisions and EPA regulations described in this document contain legally-binding requirements. This document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, this document does not impose legally-binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA and State decisionmakers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. Any decisions regarding a particular facility will be made based on the applicable statutes and regulations. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation, and EPA will consider whether or not the recommendations or interpretations in the guidance are appropriate in that situation. EPA may change this guidance in the future. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Section 2. Reporting to EPA

PWSs that are required to participate in the UCMR program must report monitoring data to EPA for evaluation (§141.35(a)). This includes CWSs and NTNCWSs that serve more than 10,000 persons (large PWSs). EPA will provide reporting for small PWSs. For this 5-year cycle of UCMR monitoring (2001-2005), transient non-community water systems, and any PWSs that exclusively use purchased water from other PWSs, that have not been notified by EPA or their State of the UCMR requirements are excluded from the monitoring program.

Large and small PWSs are responsible for ensuring compliance with State reporting requirements (§141.35(b)). EPA will pay for UCMR testing for small PWSs and will use contract laboratories to conduct sample analysis and to handle the electronic reporting for these PWSs. While large PWSs are responsible for appropriate and timely reporting of their UCMR monitoring results, the rule specifies that their laboratories will electronically enter the monitoring results for their review and approval.

This section is divided into two major sub-sections: Section 2.1 describes the contact information and monitoring data that must be provided to EPA; Section 2.2 details the methods by which the PWS or laboratory are to report the required data to EPA.

2.1 Information to Be Reported

This section provides readers with the lists and descriptions of: UCMR contaminants for which monitoring will be conducted; specific data elements to be reported to EPA for each contaminant; special reporting instructions; and point of contact information.

2.1.1 UCMR Contaminants

As noted above, EPA has organized the list of UCMR (1999) contaminants into three sub-lists based on the availability of analytical methods to detect their presence in drinking water and by the type of monitoring to be conducted: Assessment Monitoring, List 1, consists of 12 chemical contaminants for which standard analytical methods are available; Screening Survey, List 2, consists of 16 contaminants, 14 of which have monitoring requirements using newly developed analytical methods; and Pre-Screen Testing, List 3, consists of 9 contaminants for which analytical methods are being researched. Many of the contaminants on these lists are emerging contaminants, with little known about their occurrence, and little known about their potential human health effects. Although there are currently more than 30 contaminants on these three lists, no more than 30 contaminants will be monitored during any 5-year UCMR monitoring cycle.

Table 2-1, below, reflects the final UCMR (1999) List of contaminants, as published in the September 17, 1999 *Federal Register* (64 FR 50556), as well as the revisions included in the Perchlorate and Acetochlor Rule published in the March 2, 2000 *Federal Register* (65 FR 11372), and the final List 2 Rule and clarifications to the UCMR, published on January 11, 2001 (66 FR 2273).

Table 2-1: Contaminants on the UCMR (1999) List		
List 1 Contaminants - Assessment Monitoring		
2,4-dinitrotoluene	DCPA mono-acid degradate	MTBE
2,6-dinitrotoluene	DDE	Nitrobenzene
Acetochlor	EPTC	Perchlorate
DCPA di-acid degradate	Molinate	Terbacil
List 2 Contaminants - Screening Surveys		
1,2-diphenylhydrazine	Diazinon	Prometon
2-methyl-phenol	Disulfoton	RDX
2,4-dichlorophenol	Diuron	Terbufos
2,4-dinitrophenol	Fonofos	*Aeromonas*
2,4,6-trichlorophenol	Linuron	
Alachlor ESA	Nitrobenzene (low-level) *	
List 3 Contaminants - Pre-Screen Testing		
Lead-210	Cyanobacteria (blue-green algae), other fresh water algae, and their toxins	Echoviruses
Polonium-210	Caliciviruses	*Helicobacter pylori*
Adenoviruses	Coxsackieviruses	Microsporidia

* Nitrobenzene has been added to List 2 from the original UCMR (1999) List to track its occurrence at a concentration lower than the List 1 nitrobenzene minimum reporting level.

2.1.2 UCMR Data Elements

To provide a foundation for quality data, the Agency has identified 16 data elements to be reported with the analytical result for each UCMR contaminant (note that data element 17 is not being used at this time). All participating PWSs must ensure that these data elements are reported with each UCMR sample (including each spiked sample and spike duplicate sample analyzed for quality control purposes and associated with each sample and its sample batch).

Small PWSs will only be responsible for providing data elements 1 through 3 (as is specified on the sample tracking form that accompanies the sampling kits), as the remaining data elements will be provided by the EPA-designated contract laboratory. Small PWSs will need to check that the pre-printed information on the sampling form is correct.

The required data elements are listed below in Table 2-2. A brief definition of each data element is provided in the table.

Table 2-2: Unregulated Contaminant Monitoring Reporting Requirements

Data Element	*Definition*
1. Public Water System (PWS) Identification Number	The code used to identify each PWS. The code begins with the standard two-character postal State abbreviation; the remaining seven characters are unique to each PWS.
2. Public Water System Facility Identification Number - Sampling Point Identification Number and Sampling Point Type Identification	The Sampling point identification number and sampling point type identification must either be static or traceable to previous numbers and type identifications throughout the period of unregulated contaminant monitoring. The Sampling point identification number is a three-part alphanumeric designation, made up of: a. The Public Water System Facility Identification Number is an identification number established by the State, or at the State's discretion by the PWS, that is unique to the PWS for an intake for each source of water, a treatment plant, a distribution system, or any other facility associated with water treatment or delivery and provides for the relationship of facilities to each other to be maintained; b. The Sampling Point Identification Number is an identification number established by the State, or at the State's discretion the PWS, that is unique to each PWS facility that identifies the specific sampling point and allows the relationship of the sampling point to other facilities to be maintained; and c. Sampling Point Type Identification is one of following: • SR - Untreated water collected at the source of the water system facility. • EP - Entry point to the distribution system. • MD - Midpoint in the distribution system where the disinfectant residual would be expected to be typical for the system such as the location for sampling coliform indicator bacteria as described in 40 CFR 141.21. • MR - Point of maximum retention is the point located the furthest from the entry point to the distribution system which is approved by the State for trihalomethane (THM) (disinfectant byproducts (DBP)) and/or total coliform sampling. • LD - Location in the distribution system where the disinfectant residual is the lowest level approved by the State for THM (DBP) and/or total coliform sampling.
3. Sample Collection Date	The date the sample is collected reported as 4-digit year, 2-digit month, and 2-digit day.
4. Sample Identification Number	An alphanumeric value of up to 15 characters assigned by the laboratory to uniquely identify containers or groups of containers containing water samples collected at the same time and sampling point.
5. Contaminant/Parameter	The unregulated contaminant or water quality parameter for which the sample is being analyzed.

Table 2-2: Unregulated Contaminant Monitoring Reporting Requirements

Data Element	*Definition*
6. Analytical Results - Sign	An alphanumeric value indicating whether the sample analysis result was: a. (<) "less than" means the contaminant was not detected or was detected at a level "less than" the minimum reporting level (MRL). b. (=) "equal to" means the contaminant was detected at a level "equal to" the value reported in "Analytical Result - Value."
7. Analytical Result - Value	The actual numeric value of the analysis for chemical and microbiological results, or the MRL if the analytical result is less than the contaminant's MRL.
8. Analytical Result - Unit of Measure	The unit of measurement for the analytical results reported. [e.g., micrograms per liter, (µg/L); colony-forming units per 100 milliliters, (CFU/100 mL), etc.]
9. Analytical Method Number	The identification number of the analytical method used.
10. Sample Analysis Type	The type of sample collected. Permitted values include: a. RFS - Raw field sample - untreated sample collected and submitted for analysis under this rule. b. RDS - Raw duplicate field sample - untreated field sample duplicate collected at the same time and place as the raw field sample and submitted for analysis under this rule. c. TFS - Treated field sample - treated sample collected and submitted for analysis under this rule. d. TDS - Treated duplicate field sample - treated field sample duplicate collected at the same time and place as the treated field sample and submitted for analysis under this rule.
11. Sample Batch Identification Number	The sample batch identification number consists of three parts: a. Up to a 10-character laboratory identification code assigned by EPA; b. Up to a 15-character code assigned by the laboratory to uniquely identify each extraction or analysis batch. c. The date that the samples contained in each extraction batch were extracted or in an analysis batch were analyzed, reported as an 8-digit number in the form 4-digit year, 2-digit month, and 2-digit day.
12. Minimum Reporting Level	Minimum Reporting Level (MRL) refers to the lowest concentration of an analyte that may be reported. Unregulated contaminant monitoring MRLs are established in §141.40 monitoring requirements for unregulated contaminants.
13. Minimum Reporting Level Unit of Measure	The unit of measure to express the concentration, count, or other value of a contaminant level for the MRL reported. (e.g., µg/L, colony forming units/100 mL (CFU/100 mL), etc.).

Table 2-2: Unregulated Contaminant Monitoring Reporting Requirements

Data Element	*Definition*
14. Analytical Precision	Precision is the degree of agreement between two repeated measurements and is monitored through the use of duplicate spiked samples. For purposes of the Unregulated Contaminant Monitoring Regulation (UCMR), Analytical Precision is defined as the relative percent difference (RPD) between spiked matrix duplicates. The RPD for the spiked matrix duplicates analyzed in the same batch of samples as the analytical result being reported is to be entered in this field. Precision is calculated as Relative Percent Difference (RPD) between spiked matrix duplicates from the mean using: RPD = absolute value of $[(X_1 - X_2) / \{(X_1 + X_2)/2\}] \times 100\%$ *where:* • X_1 is the concentration observed in spiked field sample minus the concentration observed in unspiked field sample. • X_2 is the concentration observed in duplicate spiked field sample minus the concentration observed in unspiked field sample.
15. Analytical Accuracy	Accuracy describes how close a result is to the true value measured through the use of spiked field samples. For purposes of unregulated contaminant monitoring, accuracy is defined as the percent recovery of the contaminant in the spiked matrix sample analyzed in the same analytical batch as the sample result being reported and calculated using: % recovery = [(amt. found in spiked sample - amt. found in sample) / amt. spiked] x 100%
16. Spiking Concentration	The concentration of method analyte(s) added to a sample to be analyzed for calculating analytical precision and accuracy where the value reported use the same unit of measure reported for Analytical Results.
17. Presence/Absence	Reserved. *(Not needed for current reporting.)*

2.1.3 Special Data Reporting Instructions

Appropriate and consistent reporting of UCMR monitoring data is critical to EPA's efforts to evaluate the data for future regulatory development. The following special reporting instructions will help to ensure the consistency and quality of the UCMR data.

Reporting of Results Obtained for the DCPA Mono- and Di-Acid Degradates

The analytical methods approved under the UCMR for measuring the DCPA mono- and di-acid degradates do not, as approved, allow for the identification and quantification of the individual acids. To provide for the consistent reporting of results to the NCOD and to avoid confusion, EPA is specifying that the single analytical result obtained from these methods should be reported as total DCPA mono- and di-acid degradates. As a result, data element 5, Contaminant/Parameter, will not have as acceptable values "DCPA mono-acid degradate" or "DCPA di-acid degradate." Instead, the appropriate acceptable value for this data element will be "Total DCPA mono- and di-acid degradates."

Reporting of Additional Quality Control (QC) Data for Perchlorate

Each laboratory performing perchlorate analyses using EPA Method 314.0 will need to monitor and record additional QC data for each sample analysis. It is the responsibility of the laboratory to provide this additional QC information to the PWS and maintain it in the laboratory's own records. However, the only case in which this additional QC data must be reported to EPA is the rare situation in which all the field samples in an analysis batch require pretreatment. In this case, the laboratory should refer to the UCMR guidance document: *UCMR (1999) List 1 and List 2 Chemical Analytical Methods Quality Control Manual (QC Manual)* (EPA 815-R-01-028).

Special State Reporting Requirements

PWSs should be aware that some States may have reporting requirements beyond those specified in the UCMR, such as immediate reporting of monitoring results which suggest an imminent threat to public health. States have been asked to address any additional reporting requirements (or waiver of requirements) when they notify PWSs of their UCMR responsibilities. In the absence of any State direction on this matter, PWSs are expected to provide States with a copy of monitoring results concurrent with reporting those results to EPA via the electronic reporting system.

Reporting of Previously Collected Data

PWSs are allowed to report the results of previously collected drinking water contaminant data for any of the UCMR contaminants (listed in Table 2-1, above), as long as the data meet the specific requirements of §141.40(a)(3), (4), and (5) and Appendix A of §141.40 (see §141.35(g)). In addition, the data elements listed above in Table 2-2 must also be reported with any monitoring results from previously collected data.

2.1.4 Point of Contact Information

In addition to the data elements listed above, the UCMR requires PWSs and laboratories to provide point of contact information, including ***name, mailing address, phone number, and e-mail address*** (40 CFR 141.35(d)) for:

- *PWS technical person* – the person at the PWS who is responsible for the technical aspects of UCMR activities, such as details concerning sampling and reporting;
- *PWS official UCMR spokesperson* – the person at the PWS who is able to function as the official spokesperson for the PWS; and
- *Laboratory contact person* – the person at the laboratory who is able to address questions concerning the analyses performed.

PWSs are asked to provide this information at the outset of their year of monitoring and to provide updates if it changes during the course of UCMR implementation. The contact information will be used to facilitate communications with PWSs and their laboratories regarding any reporting problems/modifications, resolution of specific data questions, and periodic distribution of any UCMR related materials.

2.2 Data Reporting and Review Process

This section provides a description of the steps in the electronic reporting process that PWSs, laboratories, and EPA must go through before the UCMR data is made available to the public through the NCOD. The UCMR data upload, review, and approval process will follow a specific schedule and chain of custody. Figure 2 illustrates the timing and flow of this process.

After drinking water samples have been analyzed, PWSs can instruct their laboratories to upload their UCMR results directly through EPA's Central Data Exchange (CDX). The CDX, which is under final development by EPA, is the central point where PWSs and laboratories will log in to submit, view, and correct UCMR data. The Safe Drinking Water Accession and Review System (SDWARS) is the database where UCMR data will be stored during the upload and review process, prior to making the data available to the public through the NCOD.

EPA is developing several options for the electronic reporting: for laboratories that have sound electronic reporting capabilities, data can be uploaded in standard flat file format, or extensible mark-up language (XML) format; laboratories can also choose to enter the data into an on-line form that will be accessed through the CDX.

Once the laboratory completes its analysis and data upload (e.g., when it is posted to SDWARS), it will provide the PWS with the analytical results electronically through SDWARS. Large PWSs must then conduct their review and approval to allow EPA access to the data within a 30-day review period after the month in which they receive the data. Following PWS approval of the data, the State, EPA, and the PWS have an additional 60 days to conduct a quality control review before transferring the results to the NCOD, where the data will be available to the public.

As noted above, EPA will pay for UCMR testing for small PWSs that were selected to participate in the UCMR and will use contract laboratories to conduct sample analysis and to report on behalf of these PWSs.

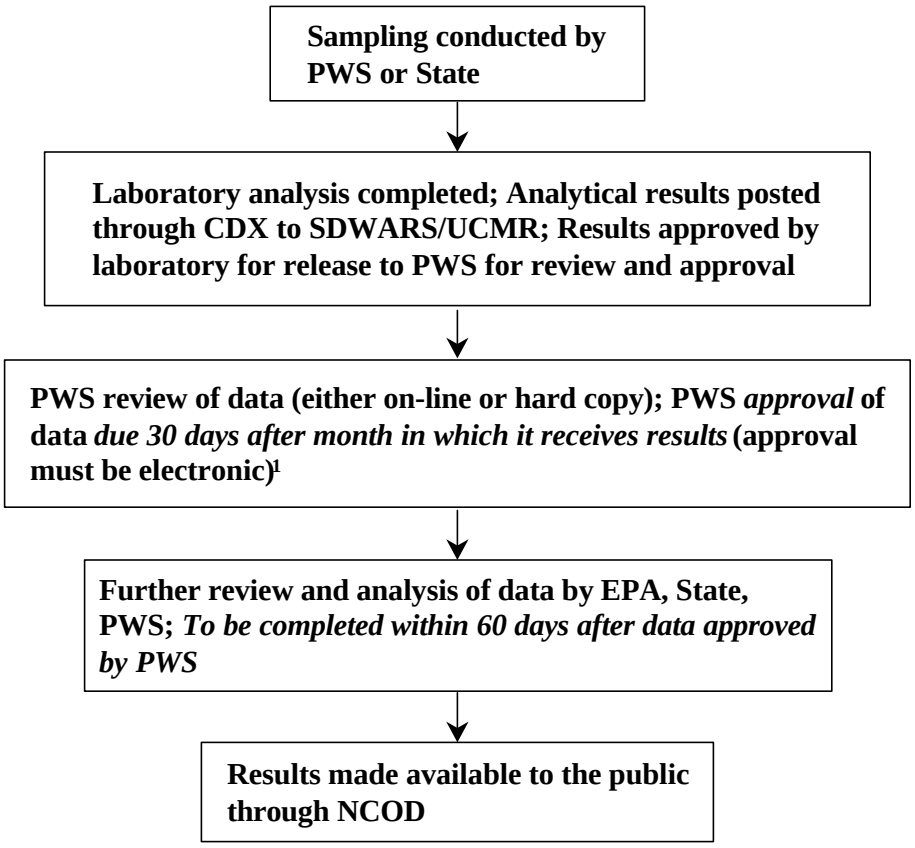
2.2.1 Central Data Exchange Registration

To provide a secure reporting process, EPA is requiring that PWSs and laboratories register as users of EPA's CDX before they are allowed access to the data reporting and reviewing sections of the Web site. CDX registration began in March 2001.

There are two types of registration within the CDX: one for pre-registered participants, and an open registration process. Participants that are pre-registered will already have their name and contact information in the database. Additionally, treatment facility and sampling point information may already be stored in the database for PWSs that are pre-registered.

A specific set of PWSs and laboratories are pre-registered in the CDX. EPA will provide written notification to large PWSs and laboratories that are pre-registered and will include the CDX Web site address and a unique "Customer Retrieval Key" (CRK) that will allow them to complete the registration process within CDX. The current Web site for accessing the CDX is: http://epacdx.lmi.org, although the specific address is subject to change as the registration and reporting process progresses. If this site address does change, go to: www.epa.gov/safewater/standard/ucmr/reporting.html, and you will be linked to the proper location.

Figure 2: UCMR Data Upload, Review, and Approval Process



[1] The results of unregulated contaminant monitoring must be reported within 30 days following the month in which the system received the results from the laboratory. For example, if the system receives monitoring results on February 14th from the laboratory, the system or laboratory must report the results to EPA no later than March 30th. Electronic indication of approval of data is necessary for EPA to gain access to data.

The pre-registered participants include:

- **Laboratories** that are pre-registered include the contract laboratories that will be analyzing the small PWSs samples, as well as the laboratories that were in the database from the Information Collection Rule. In using this criteria, EPA may have pre-registered some laboratories that will not actually participate in the UCMR, and it may have missed pre-registration of some laboratories that will be participating. Thus, the CDX allows for an "open registration" process (described below).

- **PWSs** that are pre-registered include:
  - The national representative sample of 800 *small PWSs* – EPA's implementation contractor will be handling the quality review of data for these PWSs, therefore they do have the option to register with the CDX to review their data. A hard copy of their data will be provided to them for review; and
  - All large PWSs (those that were listed as serving greater than 10,000 persons) in EPA's Safe Drinking Water Information System (SDWIS/FED). Note that similar to the pre-registration of laboratories, use of this SDWIS/FED criteria will likely have pre-registered some PWSs that are not subject to the UCMR monitoring requirements, and may have missed pre-registration of some large PWSs that actually should be participating in UCMR monitoring. The accuracy and completeness of the large PWS pre-registration will depend on the accuracy of the inventory data that populates SDWIS/FED.

    As noted, some large PWSs that were pre-registered to participate in the UCMR, may not be required to conduct UCMR monitoring. A PWS is not subject to the UCMR regulations if:

    1. It actually serves 10,000 or fewer retail and wholesale persons (except for the sample of 800 small PWSs);
    2. It is inactive (this may include PWSs that no longer serve enough customers to be considered a PWS, or a PWS that has been shut down);
    3. It merged with another PWS (e.g., no longer operates as a separate PWS);
    4. It purchases all of its water from another PWS; or
    5. It is a transient non-community water system.

    Conversely, if a PWS *is* required to conduct UCMR monitoring but did not make it onto the pre-registration list, then the PWS must use the open registration dialogue within the CDX (this process is described briefly below).

At the CDX Web site, pre-registered participants are asked to fill out information about themselves and their organization. Users will be asked for a unique username and password in addition to their pre-determined CRK. Required contact information fields include: address, phone, and e-mail address.

Once the appropriate contact information fields have been completed, users are asked to send a "Sponsor Letter" to EPA. The purpose of the Sponsor Letter is to confirm which individual(s) at the organization will have access to the PWS data, and what level of permissions each individual should have (e.g. reviewing, submitting, or approving data). Users will not have access to the data upload or review screens until EPA receives and processes the organization sponsor letter.

PWSs or laboratories that will be participating in the UCMR and are not pre-registered will need to register with the CDX through an "open registration" process. Announcements regarding open registration for CDX will be made through various trade organizations and on the UCMR Web site. Similar to the pre-registered users, these organizations will sign on with a unique user name and password. They too will need to submit a sponsor letter.

CDX registrants need to identify their "role" in the processing of UCMR data.

- Laboratory users may identify themselves as either:
  1. Reviewers – users that may **only view** data in SDWARS;
  2. Submitters – users that may **only post or view** data to SDWARS;
  3. Approvers – users that may **view, post and also approve** data to be passed onto PWSs for review.
- PWS users may identify themselves as either:
  1. Reviewers – users that may **only view** data in SDWARS;
  2. Approvers – users that may **view and also approve** data to be passed onto EPA review.

IMPORTANT NOTE: Every laboratory and PWS must have at least one registered user defined with the role of "Approver" to successfully pass data from one organization to another.

The first thing that PWSs are asked to do once they have been given access to the data is to review the PWS facility and sampling point information, and edit as needed. Ensuring that this information is accurate is important to successful upload and tracking of UCMR monitoring data.

Laboratories that wish to register, and have not received a pre-registration notice, should contact the Safe Drinking Water Hotline at 800-426-4791 to determine the Laboratory Identification Code (Lab-ID). After receiving their Lab-ID, the laboratory should contact EPA's CDX help desk for the UCMR between 8:00 a.m. to 6:00 p.m. EST/EDT at 888-890-1995 to request that they be added to the CDX, and to get further instructions on registration.

PWSs that wish to register, and have not received a pre-registration notice, should contact EPA's CDX help desk for the UCMR between 8:00 a.m. to 6:00 p.m. EST/EDT at 888-890-1995 to request that they be added to the CDX, and to get further instructions on registration.

2.2.2 Data Upload by Laboratories

EPA is requiring electronic reporting by laboratories to facilitate "one-entry" of data, to reduce reporting errors and to reduce the time involved in investigating, checking and correcting errors at all levels (laboratory, PWS, State and EPA). Once the sponsor letter is processed by EPA, data may be uploaded by laboratories through the CDX to SDWARS.

Laboratories that plan to submit data electronically will have two options:

- Standard flat file format — using pipe delimited files; or
- New XML or extensible mark-up language format.

For batch uploads, laboratories can either send one finalized set of data or upload partial batches.

EPA has developed an on-line data entry screen protocol to provide a third electronic reporting option over the Web. The data entry screen can be used by any registered laboratory or PWS. The computer that is used for Web form submissions should have a supported browser (Internet Explorer 5.0 or higher with 128-bit cipher strength encryption) and should be connected to a printer.

When the data upload is complete, laboratories should verify data submissions by logging onto the CDX Web site, and review the data stored in SDWARS to ensure that the transaction was received in a translatable format. It is the laboratory's responsibility to ensure that all such data has been approved by the appropriate user, and to notify the PWS that the data are available for review. After the laboratory electronically indicates that the data are final (approved) and ready for PWS review, the data are not accessible to the laboratory for editing unless the PWS electronically transfers permissions back to the laboratory through SDWARS.

2.2.3 PWS Electronic Review and Approval

Once the PWS is notified by the laboratory that the data are ready, the PWS has 30 days following the month in which it was notified to review and approve the data. The PWS must conduct its review and approval to allow EPA access to the data within a 30-day review period. The 30 days are counted following the end of the month in which the PWS receives the results. For example, if the PWS received the results on September 14, 2001, it has until October 31, 2001 to complete its review and approval (see §141.35(c)). Also, as with any required monitoring, the PWS has the responsibility for timely reporting within, or shortly following the monitoring period (e.g., the quarter), as specified in §141.31(a).

> Please note that EPA has made an exception to the normal reporting schedule for the first rounds of monitoring during 2001 to allow time to ensure the readiness of the electronic reporting system. *For those results received by public water systems prior to January 1, 2002, PWSs are required to report their data by April 30, 2002.*

The PWS can review the results in one of two ways (see §141.35(e)):

- it can instruct the laboratory to post its monitoring results to review the data on-line and electronically indicate its approval to make the data available to EPA; or
- it can elect to receive a hard copy of the results for review and then indicate its approval to the laboratory to upload the data to EPA. (However, the PWS, or its representative, must provide electronic approval within the data system to provide EPA access to the data.)

If during review the PWS notices a problem with the data (such as missing required data elements), it should notify the laboratory and relinquish data review and editing permissions back to the laboratory so that the problem(s) can be rectified. After the laboratory reviews and rectifies any problems with the

data, and renews the PWS permissions for data review by indicating laboratory approval of data, the PWS can then review and electronically approve the data, making it available to EPA. Note that because the rule does not give any allowances for PWS review beyond 30 days of the month data was made available to it, the PWS should begin its review as soon as possible, in case there are any problems with the data.

> ***Note:*** *the data are never available for updating to both laboratory and PWS simultaneously.*

After the data are approved by the PWS and reported to EPA, the State and EPA will have an additional 60 days to conduct a quality control review. EPA will then transfer the data from SDWARS to NCOD, where the data will be available to the public.

As noted above, EPA will pay for UCMR testing for small PWSs that were selected to participate in the UCMR, and will use contract laboratories to conduct sample analysis and to report on behalf of these PWSs. EPA's implementation contractor will conduct a quality control review of the small PWS data. However, small PWSs will receive hard copies of their data to review and comment on, if they so choose.

2.2.4 Non-electronic Upload or Review of Data

EPA expects that very few laboratories or large PWSs will not have the ability to upload or review data over the Internet. The Agency encourages laboratories or PWSs that do not own a computer to use a local library computer or other publicly accessible computer. However, EPA recognizes that some may be unable to upload or review these data electronically. PWSs or laboratories that are participating in the UCMR that do not have access to the Internet should contact the EPA Office of Ground Water and Drinking Water (OGWDW) Infrastructure Branch at 202-260-4934 to establish an alternate process for UCMR reporting.

Section 3. Reporting to the Public

Reporting UCMR information to the public is part of the SDWA's right-to-know provisions. SDWA §1445 (a)(2)(E) requires all PWSs that monitor for unregulated contaminants to inform the public if any unregulated contaminants have been detected in their drinking water and to notify the public that the monitoring results are available. The public reporting requirements for the UCMR are the same whether the PWS is conducting Assessment Monitoring, Screening Surveys, or Pre-screen Testing. PWSs must notify the public of the results of unregulated contaminant monitoring through consumer confidence reports and public notification.

3.1 Information to be Included in Consumer Confidence Reports

Published on August 19, 1998 (63 FR 44511), the Consumer Confidence Report (CCR) Rule requires community water systems (CWSs) to report unregulated contaminant monitoring results whenever such contaminants are detected. CCRs are required of CWSs only. The CCR Rule does not apply to non-community water systems.

The CCR is an annual drinking water quality report that gives PWS customers fundamental information about their drinking water. In addition to identifying the PWS's water source, the CCR provides information on the water's susceptibility to contamination and on other topics.

The centerpiece of the CCR is a table displaying the levels of detected contaminants, including unregulated contaminants, in finished water. For each detected unregulated contaminant for which monitoring is required, the table must display the average of any monitoring results from the year and the range of detections. A PWS may briefly explain in the CCR why it is monitoring for unregulated contaminants. The explanation may read as follows:

> *Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.*

CCRs are to be mailed to all billing customers by July 1 each year. The report contains information regarding monitoring from the previous year (e.g., a July 1, 2001 report would contain information from events that occurred during January 1 to December 31, 2000.) In addition, operators must make a good faith effort to distribute CCRs to all other users of the PWS. For example, a CCR could be further 'distributed' by posting it on the Internet or publishing the CCR or a notice of its availability in a local newspaper. Within 3 months of distributing the CCR, the PWS must send a certification to the primacy agency that the CCR was delivered to all customers and that the information in the CCR was correct.

EPA has published the guidance document *Preparing Your Drinking Water Consumer Confidence Report* (EPA 816-R-99-002, March 1999) to assist providers in preparing CCRs. This guidance also contains a sample certification form that PWSs can submit to their States. The Agency also has developed the CCR writer, a computer program to help water suppliers create their consumer confidence reports. Both are available on EPA's Web site at www.epa.gov/safewater/ccr1.html.

3.2 UCMR Reporting Under the Public Notification Rule

The Public Notification (PN) Rule was published on May 4, 2000 (65 FR 25981). This regulation applies to all PWSs, and requires those PWSs that are subject to the UCMR (both CWSs and NTNCWSs) to notify the public annually that unregulated contaminant monitoring results are available. PN requirements apply whenever a PWS is faced with a violation or situation affecting the water supply, to inform consumers about their drinking water. Public notices tell consumers about the violation or situation, its potential health effects, any steps they should take to protect their health, and how the PWS is addressing the problem. In addition to requiring notification of violations, the PN Rule requires PWSs to provide special notices for certain situations, including the availability of unregulated contaminant monitoring data (40 CFR 141.207). Special public notices of unregulated contaminant monitoring data are different from other public notices: they do not have to contain all the elements required of other types of public notices. Instead, they need to report only that the results are available and a phone number or contact from which the results can be obtained.

CWSs must provide public notice by mail or hand delivery and by any other method – such as publication in a local newspaper or posting in public places – necessary to reach people who would not normally be reached by the first method. NTNCWSs must also provide notice by posting, hand delivery, or mailing to each customer and known service connection and by any other method needed to reach people who would not normally be reached by the first method. Notices must be issued within one year from the date the monitoring results are known. Within 10 days of issuing the PN, a PWS must send to its State's primacy agency a copy of the notice and a certification that all public notification requirements have been met.

Public notification also applies if a PWS fails to monitor for unregulated contaminants as required under the UCMR. This violation notice would be more detailed including the 10 required elements specified in the PN Rule at §141.205. The violation notice must be issued within one year of when the PWS failed to monitor, following the same delivery methods as above.

EPA's *Public Notification Handbook* (EPA 816-R-00-010, June 2000) provides useful information for PWS operators on how to write and distribute effective public notices. It also contains a sample certification form that PWSs can submit to their State. The Handbook is available at www.epa.gov/safewater/pn.html.

3.3 Combining a Public Notice for the UCMR with a Consumer Confidence Report

CWSs may use the CCR for public notice. However, if a CWS combines the PN and CCR, it must meet the more stringent timing and distribution requirements of the PN Rule. Unlike CCRs, which must be delivered in July and cover the previous calendar year, a public notice must be delivered within 12 months after the monitoring data are available. Therefore, if unregulated contaminant monitoring data are available in the first half of the calendar year, a CCR issued in July of the following year would not meet the PN timing requirements. Because the public notice would be brief, a PWS could fairly easily meet the timing requirement by issuing a notice of availability, for example as an insert to water bills along with a mailing to consumers who do not receive water bills.

PNs must be delivered to all individuals that are served by a PWS, while CCRs must be delivered only to billing customers with a good faith effort made to reach other consumers. Because of this, if the CCR is used to fulfill PN requirements, it must be provided to all consumers, not just the billing customers who typically receive the CCR. In addition, because non-community water systems are not required to issue CCRs, the CCR is not an option for notice of the availability of UCMR data for these PWSs.

APPENDICES

- Appendix A: Acronym List
- Appendix B: Definitions
- Appendix C: Contact Information
- Appendix D: UCMR List of References

Appendix A — Acronym List

CCR	- Consumer Confidence Report
CDX	- central data exchange
CFR	- Code of Federal Regulations
CFU	- colony forming unit
CRK	- customer retrieval key
CWS	- community water system
DBP	- disinfection byproducts
DCPA	- dimethyl tetrachloroterephthalate, chemical name of the herbicide dacthal
DDE	- dichloro dichlorophenyl ethylene, a degradation product of DDT
EP	- entry point
EPA	- Environmental Protection Agency
EPTC	- s-ethyl-dipropylthiocarbamate, an herbicide
ESA	- ethanesulfonic acid, a degradation product of alachlor
LD	- Location in the distribution system where the disinfectant residual is the lowest
MD	- midpoint in the distribution system, a sampling location
m/L	- milligrams per liter
MR	- point of maximum retention
MRL	- minimum reporting level
MTBE	- methyl-tert-butyl-ether, a gasoline additive
NCOD	- National Drinking Water Contaminant Occurrence Database
NERL	- National Environmental Research Laboratory
NTIS	- National Technical Information Service
NTNCWS	- non-transient non-community water system
OGWDW	- Office of Ground Water and Drinking Water
PN	- public notice
PWS	- Public Water System
QC	- quality control
RDS	- raw duplicate field sample
RDX	- hexahydro-1,3,5-trinitro-1,3,5-triazine
RFS	- raw field sample
RPD	- relative percent difference
SDWA	- Safe Drinking Water Act
SDWARS	- Safe Drinking Water Accession and Review System
SDWIS/FED	- Safe Drinking Water Information System/Federal Version
SR	- source/raw water sampling point, prior to treatment

Appendix A — Acronym List

TDS	- treated duplicate sample
TFS	- treated field sample
THM	- trihalomethanes
UCMR	- Unregulated Contaminant Monitoring Regulation/Rule
XML	- extensible mark-up language
µg/L	- micrograms per liter

Appendix B — Definitions

Assessment Monitoring means sampling, testing, and reporting of listed contaminants that have available analytical methods and for which preliminary data indicate their possible occurrence in drinking water. Assessment Monitoring will be conducted for the UCMR (1999) List 1 contaminants.

Index Systems means a limited number of small CWSs and NTNCWSs, selected from the Assessment Monitoring systems in State Plans, that will be required to provide more detailed and frequent monitoring for the UCMR (1999) List 1 contaminants (§141.40(a)(6)). In addition to the reporting information required for Assessment Monitoring, the Index Systems must also report information on PWS operating conditions (such as water source, pumping rates, and environmental setting) (§141.40(a)(6)). These PWSs must monitor each year of the 5-year UCMR cycle, with EPA paying for all reasonable monitoring costs (§141.40(a)(4)(i)(A)).

Listed contaminant means a contaminant identified as an analyte in Table 1, 141.40(a)(3) of the UCMR. To distinguish the current 1999 UCMR listed contaminants from potential future UCMR listed contaminants, all references to UCMR contaminant lists will identify the appropriate year in parentheses immediately following the acronym UCMR and before the referenced list. For example, the contaminants included in the UCMR (1999) List include the component lists identified as UCMR (1999) List 1, UCMR (1999) List 2 and UCMR (1999) List 3 contaminants.

Listing cycle means the 5-year period for which each revised UCMR list is effective and during which no more than 30 unregulated contaminants from the list may be required to be monitored.

Monitored systems means all community water systems serving more than 10,000 people, and the national representative sample of community and non-transient non-community water systems serving 10,000 or fewer people that are selected to be part of a State Plan for the UCMR.

Monitoring (as distinct from Assessment Monitoring) means all aspects of determining the quality of drinking water relative to the listed contaminants. These aspects include drinking water sampling and testing, and the reviewing, reporting, and submission to EPA of analytical results.

*Most vulnerable systems (*or *Systems most vulnerable)* means a subset of 5 to not more than 25 PWSs of all monitored PWSs in a State that are determined by that State in consultation with the EPA Regional Office to be most likely to have the listed contaminants occur in their drinking waters, considering the characteristics of the listed contaminants, precipitation, PWS operation, and environmental conditions (soils, geology and land use).

Pre-Screen Testing means sampling, testing, and reporting of the listed contaminants that may have newly emerged as drinking water concerns and, in most cases, for which methods are in an early stage of development. Pre-Screen Testing will be conducted by a limited number of PWSs (up to 200). Pre-Screen Testing will be conducted for the UCMR (1999) List 3 contaminants.

Random Sampling is a statistical sampling method by which each member of the population has an equal probability of being selected as part of a sample (the sample being a small subset of the population which represents the population as a whole).

Representative Sample (or *National Representative Sample*) means a small subset of all community and non-transient non-community water systems serving 10,000 or fewer people which EPA selects using a random number generator. The PWSs in the representative sample are selected using a stratified random sampling process that ensures that this small subset of PWSs will be representative of all small PWSs nationally.

Sampling means the act of collecting water from the appropriate location in a public water system (from the applicable point from an intake or well to the end of a distribution line, or in some limited cases, a residential tap) following proper methods for the particular contaminant or group of contaminants.

Appendix B — Definitions

Sampling Point means a unique location where samples are to be collected.

Screening Survey means sampling, testing, and reporting of the List 2 contaminants. These contaminants have analytical methods which have been recently developed, and have uncertain potential for occurrence in drinking water.

State means, each of the fifty states, the District of Columbia, U.S. Territories, and Tribal lands. For the national representative sample, Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, and American Samoa are each treated as an individual state. All Tribal water systems in the U.S. that have status as a State under Section 1451 of the Safe Drinking Water Act for this program will be considered collectively as one state for the purposes of selecting a representative sample of small PWSs.

*State Monitoring Plan (*or *State Plan)* means a State's portion of the national representative sample of CWSs and NTNCWSs serving 10,000 or fewer people which must monitor for unregulated contaminants (Assessment Monitoring, Screening Survey(s) and Index Systems) and all large PWSs (PWSs serving greater than 10,000 people) which are required to monitor for Screening Survey contaminants. A State Plan will also include the PWSs required to conduct Pre-Screen Testing, selected from the State's designation of vulnerable PWSs.

Stratified Random Sampling is a procedure to draw a random sample from a population that has been divided into subpopulations or strata, with each stratum comprised of a population subset sharing common characteristics. Random samples are selected from each stratum proportional to that stratum's proportion of the entire population. The aggregate random sample (compiled from all the strata samples) provides a random sample of the entire population that reflects the proportional distribution of characteristics of the population. In the context of the UCMR, the population served by public water systems was stratified by size (with size categories of 500 or fewer people served, 501 to 3,300 people served, and 3,301 to 10,000 people served) and by water source type supplying the water system (ground water or surface water). This stratification was done to ensure that PWSs randomly selected as nationally representative sample PWSs would proportionally reflect the actual number of size and water type categories nationally.

Testing means, for the purposes of the UCMR and distinct from *Pre-Screen Testing*, the submission and/or shipment of samples following appropriate preservation practices to protect the integrity of the sample; the chemical, radiological, physical and/or microbiological analysis of samples; and the reporting of the sample's analytical results for evaluation. Testing is a subset of activities defined as *monitoring*.

Unregulated contaminants means chemical, microbiological, radiological and other substances that occur in drinking water or sources of drinking water that are not currently regulated under the federal drinking water program. EPA has not issued standards for these substances in drinking water (i.e., maximum contaminant levels or treatment technology requirements).

Vulnerable time (or *vulnerable period*) means the time of the year determined as the most likely to have the listed group of contaminants present at their highest concentrations or densities in drinking water.

Appendix C — Contact Information

For further information on this guidance document, PWSs should contact their State Drinking Water Agency or the appropriate EPA Region. State drinking water agencies with questions on this guidance should contact their appropriate EPA Region coordinator, or the UCMR Implementation Team Leader listed below.

EPA UCMR Implementation Team Leader:

Daniel Hautman, Technical Support Center, Standards and Risk Management Division, Office of Ground Water and Drinking Water (MS 140), 26 West Martin Luther King Jr. Dr., Cincinnati, OH 45268. (513) 569-7274.

LMI Hotline:

888-890-1995, available from 8:00 a.m. to 6:00 p.m. EST

Safe Drinking Water Hotline:

800-426-4791

Regional Contacts:

I	Chris Ryan, 1 Congress Street, 11th Floor, Boston, MA 02118. Phone: (617) 918-1567.
II	Robert Poon, 290 Broadway, Room 2432, New York, NY 10007-1866. Phone: (212) 637-3821.
III	Michelle Hoover, 1650 Arch Street, Philadelphia, PA 19103-2029. Phone: (215) 814-5258.
IV	Janine Morris, Sam Nunn Federal Center, 61 Forsyth St, SW, Atlanta, GA 30303. Phone: (404) 562-9480.
V	Janet Kuefler, 77 West Jackson Blvd., Chicago, IL 60604-3507. Phone: (312) 886-0123.
VI	Andrew J. Waite, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202. Phone: (214) 665-7332.
VII	Stan Calow, 901 N. Fifth Street, Kansas City, KS 66101. Phone: (913) 551-7410.
VIII	Rod Glebe, One Denver Place, 999 18th Street, Suite 500, Denver, CO 80202. Phone: (303) 312-6627.
IX	Jill Korte, 75 Hawthorne Street, San Francisco, CA 94105. Phone: (415) 744-1853.
X	Gene Taylor, 1200 Sixth Avenue, Seattle, WA 98101. Phone: (206) 553-1389.

Appendix D — UCMR List of References

The documents listed below present detailed information on UCMR program requirements for PWSs, States, and EPA Regions who are responsible for UCMR program planning, implementation, and oversight. All documents are available by calling the EPA Safe Drinking Water Hotline at (800) 426-4791, or by viewing it on EPA's UCMR Web site: http://www.epa.gov/safewater/ucmr.html.

Please note: *Because of the evolving nature of the UCMR program, supplemental rule-making efforts may add additional contaminants to be monitored and hence, additional sampling and analytical procedures may need to be identified. For this reason, EPA will issue supplemental guidance to owners and operators of small public water systems explaining any new requirements. EPA anticipates developing supplemental guidance after analytical methods are approved for monitoring the UCMR (1999) List 2 and 3 contaminants in subsequent rules.*

Guidance Documents

1. Implementation Guide for Unregulated Contaminant Monitoring Rule:
   Volume I – Introduction to CDX and UCMR Submission
   Volume II – Web Forms
   Volume III – *[not relevant to UCMR]*
   Volume IV – XML Standards for Submitting Data
   Volume V – Flat File Format
   Forthcoming
   This five volume document provides detailed information on how to use the EPA Central Data Exchange and the Safe Drinking Water Accession and Review System for the UCMR. This guidance is available on the Web at: http://epacdx.lmi.org/FAQ.asp.

2. UCMR (1999) List 1 and List 2 Chemical Analytical Methods Quality Control Manual
   EPA 815-R-01-028
   This document replaces the UCMR Analytical Methods and Quality Control Manual and Supplements, and adds the new analytical methods QC information from UCMR (1999) List 2.

3. Unregulated Contaminant Monitoring Regulation Guidance for Operators of Public Water Systems Serving 10,000 or Fewer People
   EPA 815-R-01-002
   This document identifies the sampling and reporting responsibilities of small PWSs selected to participate in the Assessment Monitoring component of the UCMR. This guidance also highlights important changes in the UCMR which reduce the monetary and administrative burden on small PWSs. Please Note: A draft of this document was released for public comment as EPA 815-R-99-005, and a subsequent final document was released with the number EPA 815-R-00-018. This final guidance document is being released with the number EPA 815-R-01-002, and replaces the previous versions.

Fact Sheets

1. Unregulated Contaminant Monitoring Regulation: Monitoring for List 1 Contaminants by Large Public Water Systems
   EPA 815-F-01-003
   This is a fact sheet for large public water systems which provides a brief overview of their responsibilities in implementing the Assessment Monitoring portion of the UCMR.

2. Unregulated Contaminant Monitoring Regulation: Monitoring for List 1 Contaminants by Small Public Water Systems
   EPA 815-F-01-004
   This is a fact sheet for small public water systems which provides a brief overview of their responsibilities in implementing the Assessment Monitoring portion of the UCMR.

3. Unregulated Contaminant Monitoring Regulation: Screening Survey for List 2 Contaminants by Selected Large Public Water Systems
   EPA 815-F-01-005
   This is a fact sheet for large public water systems which provides a brief overview of their responsibilities in implementing the Screening Survey portion of the UCMR.

4. Unregulated Contaminant Monitoring Regulation: Screening Survey for List 2 Contaminants by Selected Small Public Water Systems
   EPA 815-F-01-006
   This is a fact sheet for small public water systems which provides a brief overview of their responsibilities in implementing the Screening Survey portion of the UCMR.