ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 141

[Docket No. OW–2004–0001; FRL–7954–8]

RIN 2040–AD93

Unregulated Contaminant Monitoring Regulation (UCMR) for Public Water Systems Revisions

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Safe Drinking Water Act (SDWA), as amended in 1996, requires the United States Environmental Protection Agency (EPA) to establish criteria for a program to monitor unregulated contaminants and to publish a list of contaminants to be monitored every five years. EPA published such a list for the first Unregulated Contaminant Monitoring Regulation cycle (*i.e.*, UCMR 1) and a revised approach for UCMR implementation in the **Federal Register** dated September 17, 1999. UCMR 1 established a three-tiered approach for monitoring contaminants based on the availability of analytical methods and laboratory capacity considerations. Today's proposed regulation meets the SDWA requirement to publish a listing of unregulated contaminants every five years.

Today's action proposes the design for the second UCMR cycle. EPA is proposing to require monitoring of 26 chemicals using nine different analytical methods. UCMR 2 monitoring is proposed to occur during 2007–2011.This proposed action builds on the established structure of UCMR 1 and proposes some changes to the rule design. The primary changes to UCMR 1 include: Redesign of the Screening Survey for List 2 contaminants to increase the statistical strength of the sampling results by incorporating additional PWSs; updates to the lists of contaminants to be monitored and the analytical methods approved to conduct that monitoring; revisions to the ''data elements'' required to be reported; and some revisions to the implementation of the monitoring program to reflect ''lessons learned'' during UCMR 1. A systematic procedure for the determination of a Minimum Reporting Level (MRL) is also being proposed.

Implementation of today's proposed action would benefit the environment by providing EPA and other interested parties with scientifically valid data on the occurrence of these contaminants in drinking water, permitting the assessment of the population potentially being exposed and the levels of that exposure. These data are the primary source of occurrence and exposure data for the Agency to determine whether to regulate these contaminants.

DATES: Written comments must be postmarked by midnight, delivered by hand, or electronically mailed on or before October 21, 2005.

ADDRESSES: Submit your comments, identified by Docket ID No. OW–2004–0001, by one of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov.* Follow the on-line instructions for submitting comments.
- Agency Web site: *http://www.epa.gov/edocket.* EDOCKET, EPA's electronic public docket and comment system, is EPA's preferred method for receiving comments. Follow the on-line instructions for submitting comments.
- E-mail: *OW-Docket@epa.gov.*
- Mail: Send three copies of your comments and any enclosures to: Water Docket, United States Environmental Protection Agency, Mail Code 4101T, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, Attention Docket ID No. OW–2004–0001. Commenters should use a separate paragraph for each issue discussed. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St., NW., Washington, DC 20503.
- Hand Delivery: Deliver your comments to Water Docket, EPA Docket Center, Environmental Protection Agency, Room B102, 1301 Constitution Ave., NW., Washington, DC, Attention Docket ID No. OW–2004–0001. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. OW–2004–0001. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.epa.gov/edocket,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through EDOCKET, *http://www.regulations.gov,* or e-mail. The EPA EDOCKET and the *http://www.regulations.gov* Web sites are ''anonymous access'' systems, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through EDOCKET or *http://www.regulations.gov,* your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit EDOCKET on-line or see the **Federal Register** of May 31, 2002 (67 FR 38102 (USEPA, 2002c)).

Docket: All documents in the docket are listed in the EDOCKET index at *http://www.epa.gov/edocket.* Although listed in the index, some information is not publicly available, *i.e.*, CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in EDOCKET or in hard copy at the Water Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Avenue, NW., Washington, DC. This Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the Water Docket is (202) 566–2426.

FOR FURTHER INFORMATION CONTACT: Gregory Carroll, Technical Support Center, Office of Ground Water and Drinking Water, United States Environmental Protection Agency, Office of Water, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268, telephone (513) 569–7948; or e-mail at *carroll.gregory@epa.gov.* For general information, contact the Safe Drinking Water Hotline. Callers within the United States may reach the Hotline at (800) 426–4791. The Hotline is open Monday through Friday, excluding legal holidays, from 9 a.m. to 5 p.m. eastern time.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does This Action Apply to Me?

Entities regulated by this action are public water systems (PWSs). All large community and non-transient non-community water systems serving more than 10,000 people will be required to monitor. A community water system means a PWS which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Non-transient non-community water system means a PWS that is not a community water system and that regularly serves at least 25 of the same people over 6 months per year. Only a nationally representative sample of community and non-transient non-community systems serving 10,000 or fewer people will be required to monitor. Transient non-community systems (*i.e.*, systems that do not regularly serve at least 25 of the same people over 6 months per year) will not be required to monitor. States, territories, and tribes with primary enforcement responsibility (primacy) to administer the regulatory program for PWSs under the Safe Drinking Water Act (SDWA) may participate in the implementation of the second cycle of the Unregulated Contaminant Monitoring Regulation (*i.e.*, UCMR 2) through a Partnership Agreement. These Primacy agencies may choose to conduct analyses to measure for contaminants in water samples collected for the UCMR 2; in which case they will be regulated by this action. Regulated categories and entities are identified in the following table.

Category	Examples of potentially regulated entities	NAICS [a]
State, local, & tribal governments	States, local and tribal governments that analyze water samples on behalf of public water systems required to conduct such analysis; states, local and tribal governments that directly operate community and non-transient non-community water systems required to monitor.	924110
Industry	Private operators of community and non-transient non-community water systems required to monitor.	221310
Municipalities	Municipal operators of community and non-transient non-community water systems required to monitor.	924110

[a] NAICS = North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that the EPA is now aware may potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your facility is regulated by this action, you should carefully examine the definition of PWS in § 141.2 of Title 40 of the Code of Federal Regulations, and applicability criteria in § 141.40(a)(1) and (2) of today's proposed action. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What Should I Consider as I Prepare My Comments for EPA?

1. Submitting Confidential Business Information

Do not submit this information to EPA through EDOCKET, *http://www.regulations.gov*, or e-mail. Clearly mark the part or all of the information that you claim to be confidential business information (CBI). For CBI information in a disk or CD–ROM that you mail to EPA, mark the outside of the disk or CD–ROM as CBI and then identify electronically within the disk or CD–ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. Tips for Preparing Your Comments

When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
- Follow directions—The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

Abbreviations and Acronyms

245–HBB 2,2′,4,4′,5,5′-hexabromobiphenyl
µg/L Microgram per liter
ADI Acceptable daily intake
ASDWA Association of State Drinking Water Administrators
ATSDR Agency for Toxic Substances and Disease Registry
BDE–47 2,2′,4,4′-tetrabromodiphenyl ether
BDE–99 2,2′,4,4′,5-pentabromodiphenyl ether
BDE–100 2,2′,4,4′,6-pentabromodiphenyl ether
BDE–153 2,2′,4,4′,5,5′-hexabromodiphenyl ether
CBI Confidential Business Information
CCL Contaminant Candidate List
CF Concentration fortified
CFR Code of Federal Regulations
CWS Community water system
DBP Disinfection Byproduct
DBPR Stage 1 Disinfection Byproducts Rule
DEA Desethylatrazine
DACT Diaminochlorotriazine or Desethyldesisopropylatrazine.
DIA Desisopropylatrazine
DQO Data quality objective
DSMRT Distribution system maximum residence time
EPA United States Environmental Protection Agency
EPTDS Entry point to the distribution system
ESA Ethane sulfonic acid
FACA Federal Advisory Committee Act
FR **Federal Register**
FS Field sample
g/kg Gram per kilogram
GWUDI Ground water under the direct influence of surface water
HR_{PIR} Half range prediction interval of results
HSDB Hazardous Substances Database

IARC International Agency for Research on Cancer
ICR Information collection request
IDC Initial demonstration of capability
IRIS Integrated Risk Information System
LCMRL Lowest concentration minimum reporting level
LD_{50} Median lethal dose
LFSM Laboratory fortified sample matrix
LFSMD Laboratory fortified sample matrix duplicate
MCL Maximum contaminant level mg/kg Milligram per kilogram
mg/kg/day Milligram per kilogram per day mg/L Milligram per liter
MRL Minimum reporting level
NCOD National Drinking Water Contaminant Occurrence Database
NDBA N-nitroso-di-n-butylamine
NDEA N-nitroso-diethylamine
NDMA N-nitroso-dimethylamine
NDPA N-nitroso-di-n-propylamine
NMEA N-nitroso-methylethylamine
NPDWR National Primary Drinking Water Regulation
NPYR N-nitroso-pyrrolidine
NTNCWS Non-transient non-community water system
NTTAA National Technology Transfer and Advancement Act
OA Oxanilic acid
OMB Office of Management and Budget
ORD Office of Research and Development
PA Partnership agreement
PBB Polybrominated biphenyls
PBDE Polybrominated diphenyl ethers pH Negative log of the hydrogen ion concentration
PIR Prediction interval of results
PT Proficiency testing
PWS Public water system
PWSID Public water system identification
QC Quality control
RDX Hexahydro–1,3,5-trinitro–1,3,5–triazine
RED Reregistration Eligibility Decision
RFA Regulatory Flexibility Act
RfD Reference dose
RPD Relative percent difference
SBA Small Business Administration
SDWA Safe Drinking Water Act
SRF State Revolving Fund
TBBPA Tetrabromobisphenol A
TDI Tolerable daily intake
TNT 2,4,6–trinitrotoluene
TRI Toxics Release Inventory
UCMR Unregulated Contaminant Monitoring Regulation
UMRA Unfunded Mandates Reform Act of 1995
USGS United States Geological Survey
USEPA United States Environmental Protection Agency

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List of Exhibits and Tables

II. Statutory Authority and Background

A. What Is the Statutory Authority for UCMR?

Section 1445(a)(2) of the Safe Drinking Water Act (SDWA), as amended in 1996, requires that once every five years, beginning in August 1999, the United States Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants to be monitored by PWSs, and that EPA enter the monitoring data into a national contaminant occurrence database. EPA's UCMR program must ensure that only a national representative sample of public water systems (PWSs) serving 10,000 or fewer people will be required to monitor; however, there are no such restrictions on the number of systems serving more than 10,000 people. EPA must vary the frequency and schedule for monitoring based on the number of systems served, the source of supply, and the contaminants likely to be found.

B. How Does EPA Meet These Statutory Requirements?

To fulfill the initial SDWA requirements, EPA published ''Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems; Final Rule,'' on September 17, 1999 (64 FR 50556, (USEPA, 1999c)). Several supplemental rules were published to establish analytical methods and to provide clarifications and refinements to the initial rule: 65 FR 11372, March 2, 2000 (USEPA, 2000a); 66 FR 2273, January 11, 2001 (USEPA, 2001a); and 67 FR 65888, October 29, 2002 (USEPA, 2002d).[1] SDWA, as amended in 1996, requires that at least once every five years EPA identify a list of no more than 30 unregulated contaminants to be monitored. Today's action fulfills this statutory obligation, identifying 26 priority contaminants for monitoring using nine proposed analytical methods. To comply with SDWA, EPA has developed a proposed contaminant list (Exhibit 1) and sampling design for UCMR 2 (2007–2011) with input from both stakeholders and an EPA working group.

EXHIBIT 1.—PROPOSED CONTAMINANT LIST AND SAMPLING DESIGN

List 1. Assessment Monitoring

1,3-dinitrobenzene	2,4,6-trinitrotoluene (TNT).
2,2′,4,4′-tetrabromodiphenyl ether (BDE–47)	Dimethoate.
2,2′,4,4′,5-pentabromodiphenyl ether (BDE–99)	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX).
2,2′,4,4′,5,5′-hexabromobiphenyl (245–HBB)	Terbufos sulfone.
2,2′,4,4′,5,5′-hexabromodiphenyl ether (BDE–153)	Perchlorate.

[1] Additional technical corrections to the rule, as well as adjustments to the initial reporting process, were published including: May 16, 2001 (66 FR 27215 (USEPA, 2001b)); September 4, 2001 (66 FR 46221 (USEPA, 2001d)); and March 12, 2002 (67 FR 11043 (USEPA, 2002b)). In total, these rules and revisions constitute the ''UCMR 1.'' This amendment to establish new contaminants for monitoring during the second five-year cycle is referred to as ''UCMR 2.''

EXHIBIT 1.—PROPOSED CONTAMINANT LIST AND SAMPLING DESIGN—Continued

2,2′,4,4′,6-pentabromodiphenyl ether (BDE–100)	

List 2. Screening Survey

Acetochlor	Metolachlor OA.
Acetochlor ESA	N-nitroso-diethylamine (NDEA).
Acetochlor OA	N-nitroso-dimethylamine (NDMA).
Alachlor	N-nitroso-di-n-butylamine (NDBA).
Alachlor ESA	N-nitroso-di-n-propylamine (NDPA).
Alachlor OA	N-nitroso-methylethylamine (NMEA).
Metolachlor	N-nitroso-pyrrolidine (NPYR).
Metolachlor ESA	

The UCMR for the first cycle of monitoring (*i.e.*, UCMR 1) established a three-tiered approach for monitoring contaminants based on the availability of analytical methods. Assessment Monitoring contaminants on List 1 (UCMR 1) could be analyzed using analytical methods that were in common use in drinking water laboratories. Screening Survey contaminants on List 2 (UCMR 1) could only be analyzed using newly developed analytical methods that were not in common use in drinking water laboratories. Laboratory capacity to perform these analyses was therefore limited. No analytical methods were available to monitor for the Pre-Screen Survey contaminants on List 3 (UCMR 1), although the regulation allowed for the possibility of such methods becoming available during the cycle.

EPA has developed the design for the second UCMR cycle (*i.e.*, UCMR 2). EPA is building upon the established structure of UCMR 1, and proposing some changes to the rule design, based upon lessons learned during the UCMR 1 cycle. The design of UCMR 2 is summarized below, including a discussion of the changes proposed for UCMR 2, and the reasons for those proposed changes.

Assessment Monitoring (*i.e.*, List 1) is the largest in scope of the three UCMR 2 monitoring components (or tiers). Under Assessment Monitoring, List 1 contaminants, for which standard analytical methods are available, are monitored to assess national occurrence in drinking water. These are the priority contaminants for which analytical method technologies are well established. EPA is proposing that Assessment Monitoring be required for all large water systems (those serving more than 10,000 people), and for a nationally representative sample of 800 small water systems (those serving 10,000 or fewer people), during a continuous 12-month period during July 2007 through June 2010 quarterly for surface water systems, and twice, at 6-month intervals for ground water systems). Systems subject to UCMR 2 include community water systems (CWSs) and non-transient non-community water systems (NTNCWSs), except those systems that purchase all of their finished water from another PWS.

EPA designed the sampling frame for the national sample of small systems to ensure that UCMR 2 sampling results would yield a high level of confidence and a low margin of error. To attain the representative sample, EPA is proposing that small systems be stratified by water source type (ground or surface water), service size category, and State (each allocated a minimum of two systems). With monitoring data from all large PWSs (a census of all 3,110 large systems) and a statistically representative sample of 800 small PWSs (for a total of approximately 3,910 systems), List 1 Assessment Monitoring provides sample data suitable for national population exposure assessments.

The second tier of UCMR 2 is referred to as List 2 or Screening Survey monitoring. List 2 contaminants are those for which analytical methods have been recently developed, and for which the technologies are not widely used and, therefore, laboratory capacity may be insufficient to conduct the larger scale Assessment Monitoring. EPA is proposing that a Screening Survey be conducted by approximately 320 PWSs serving more than 100,000 people (*i.e.*, all systems in this largest size category), by a randomly selected sample of 320 PWSs serving between 10,001 and 100,000 people, and by 480 small PWSs. Screening Survey systems will be required to monitor during a continuous 12-month period during July 2007 through June 2009 quarterly for surface water systems, and twice, at 6-month intervals, for ground water systems). With a total of over 1,100 systems participating in the Screening Survey, sufficient data will be generated to provide an overall national estimate of population exposure.

The third tier of UCMR 2 is called Pre-Screen Testing. Pre-Screen Testing is envisioned for use with methods that are in the early stages of development, and/or methods that are very specialized or limited in applicability. It is designed to be conducted by up to 200 PWSs that would be identified by State agencies as vulnerable to the List 3 contaminants. This would be a targeted sampling to assess occurrence in the most vulnerable settings, and could help to guide the next steps for contaminant evaluation and methods development. EPA is not proposing any Pre-Screen Testing in today's action.

C. How Are the Contaminant Candidate List, the National Contaminant Occurrence Database, and the UCMR Interrelated?

The UCMR program was developed in coordination with the Contaminant Candidate List (CCL) and the National Drinking Water Contaminant Occurrence Database (NCOD). The CCL is a list of contaminants that are not subject to any proposed or promulgated National Primary Drinking Water Regulation (NPDWR), are known or anticipated to occur at PWSs, and may require regulation under SDWA. The first CCL, published in March 1998 (referred to as ''CCL 1''), identified 60 contaminants or contaminant groups (63 FR 10274, March 2, 1998 (USEPA, 1998b)) that were divided into categories to represent research and data needs for each of the following: (1) Regulatory determination priorities; (2) health effects research priorities; (3) treatment research priorities; (4) analytical methods research priorities; and (5) occurrence priorities. The data collected through the UCMR program is being stored in the NCOD to facilitate analysis and review of contaminant occurrence; to guide the conduct of the CCL process; and to support the Administrator's determination to regulate a contaminant in the interest of protecting public health, as required under SDWA section 1412(b)(1). Results of the UCMR 1 monitoring can be

viewed by the public at EPA's UCMR Web site: *http://www.epa.gov/safewater/ucmr/data.html*. The second CCL was published in February 2005 and carried over many of the unregulated contaminants from CCL 1, for which research is ongoing (70 FR 9071, February 24, 2005 (USEPA, 2005).

III. Requirements of the Unregulated Contaminant Monitoring Program

EPA has developed, and is proposing in today's action, a revised design for UCMR 2 based on experience with UCMR 1. In addition to requesting comments on the list of UCMR 2 contaminants, EPA is also requesting comments on the Agency's specification of minimum reporting levels (MRLs) and the procedure to establish them. Other changes for which EPA is requesting comment include modifications or clarifications to the systems required to monitor, the timing and location of monitoring, and the reporting process. Today's proposed modifications to the rule also incorporate lessons learned during the course of UCMR 1 implementation. Throughout UCMR 1, EPA worked with States, regulated PWSs, and analytical laboratories in addressing implementation and regulatory requirements. EPA reviewed various aspects of the UCMR 1 program and identified several critical changes that will improve implementation. The specific approach that EPA is proposing for UCMR 2, along with the rationale for any changes, is described in this section.

Exhibit 2 provides a list of the substantive changes to UCMR 1 being proposed in today's action. EPA invites the public to comment on these changes to the UCMR program. Instructions for submission of public comments are provided in the **ADDRESSES** section of this preamble. Key aspects of the UCMR program that remain the same include direct implementation of the rule by EPA, the design of Assessment Monitoring, and EPA funding for the small system testing (*i.e.*, for those systems serving 10,000 or fewer people).

Although EPA is republishing the entire text of 40 CFR 141.35 and 40 CFR 141.40 of today's action for readability purposes, EPA is not reproposing for public comment aspects of the rule that are unchanged from the 1999 UCMR 1. The unchanged aspects of UCMR 1 include: (1) The design of Assessment Monitoring (for List 1 contaminants), except for the elimination of Index Systems, and Pre-Screen Testing (for List 3 contaminants); (2) the frequency of sampling; (3) the requirement to resample when a sampling error occurs; (4) use of the largest concentration when duplicate samples are reported; (5) the requirements for laboratories to enter monitoring data, and large PWSs to approve and submit data using EPA's electronic data reporting system; (6) reporting of PWS contacts; (7) the definition of violations; (8) the opportunity for State and Tribes to enter into Partnership Agreements; (9) the Governors' petition process; and (10) the State-wide waiver provision. EPA is not seeking, and will not respond to comments on parts of the UCMR that are unchanged under today's action.

EXHIBIT 2.—SUMMARY OF PROPOSED MAJOR CHANGES TO UCMR 1

Change	Preamble	Rule
New list of 26 priority contaminants, and 9 analytical methods	Contaminants: III.A.; Analytical Methods: III.B.; III.C.	§ 141.40(a)(3).
Modified laboratory approval program	III.E.1	§ 141.40(a)(5)(ii)–(vi).
QC requirements: Detection limit would be replaced by MRL; No longer required to analyze a field reagent blank or QC sample.	III.E.2	§§ 141.40(a)(5)(iii)–(v).
Changes in timing for posting and approval of monitoring data	III.E.2; III.J.2	§ 141.35(c)(6)(ii); § 141.40(a)(5)(vii).
Elimination of Index systems	III.F.1.b	§ 141.40(a)(2)(ii)(C).
More systems to monitor for Screening Survey	III.F.2	§ 141.40(a)(2)(i)(B); § 141.40(a)(2)(ii)(B).
Screening Survey monitoring to be conducted across 2 years	III.F.2.b; III.K.2	§ 141.40(a)(3).
Establishment of date for rule applicability; Clarification of system population definition.	III.F.4	§ 141.35(a); § 141.40(a).
Large systems must submit contact and sampling location information	III.J.1.a	§ 141.35(b)(1).
Large system monitoring will be scheduled by EPA with allowance for systems to change schedule if needed.	III.G.2	§ 141.35(c)(5); § 141.40(a)(4)(i).
All samples collected at EPTDSs; nitorsamines samples for PWSs subject to Stage 1 D/DBP Rule collected at DSMRT and EPTDS locations; Representative EPTDS proposals by PWSs with multiple ground water EPTDSs.	III.H; III.J.1.b	Monitor at EPTDS and DSMRT locations: § 141.40(a)(3); § 141.40(a)(4)(i)(C); § 141.40(a)(4)(ii)(B). EPTDS proposal: § 141.35(c)(3).
Changes to data elements	III.J.3	§ 141.35(e).

Acronyms: QC = quality control; MRL = minimum reporting level; PWS = public water system; EPTDS = entry point to the distribution system; D/DBP Rule = Stage 1 Disinfectant/Disinfection Byproducts Rule; DSMRT = distribution system maximum residence time; UCMR = Unregulated Contaminant Monitoring Regulation.

A. What Priority Contaminants Were Selected for UCMR 2?

1. Compilation of Initial List of UCMR 2 Candidates

With public health protection as its top priority, EPA has drawn upon several different sources in developing the proposed UCMR 2 contaminant list. In the early stages of list development, EPA began by identifying a broad list of over 200 contaminants. This information and rationale was first presented at a public stakeholder meeting held on October 29, 2003, within a draft discussion document titled: ''UCMR 2: Contaminant Selection Rationale'' (USEPA, 2003e). The following sources were used to identify potential UCMR 2 contaminants:

- *UCMR 1 ''reserved'' contaminants (CCL 1 occurrence priorities):* Includes those contaminants identified as priorities in the September 1999 UCMR (64 FR 50556 (USEPA, 1999c)), but reserved for later monitoring because methods were not yet available. By design, most of the UCMR 1 contaminants were selected from the list of CCL 1 contaminants that required the

collection of additional occurrence data and for which analytical methods were available (63 FR 10274 (USEPA, 1998b)).

• *Other UCMR 1 contaminants:* Includes several contaminants that were monitored under UCMR 1 and were identified as potential UCMR 2 priorities because Screening Survey results indicate the need for more information, or because improved analytical methods for these contaminants have been developed since the last cycle.

• *CCL 1 ''deferred pesticides'':* Includes a list of priority pesticides ranked by chemical properties, occurrence, and use that EPA identified. EPA decided to ''defer'' certain pesticides for later consideration pending further evaluation of these pesticides to determine if they occur at levels of health concern (62 FR 52194, October 6, 1997 (USEPA, 1997)). EPA plans to consider the deferred pesticides in the context of an improved approach for selecting contaminants for future CCLs. This will enable the Agency to consider these contaminants in a consistent, reproducible manner with a wide range of other contaminants.

• *CCL 1 suspected endocrine disruptors:* Includes a list of chemicals that were suspected of having adverse effects on endocrine function (62 FR 52194, October 6, 1997 (USEPA, 1997)) that EPA identified during the development of CCL 1. For certain suspected endocrine disruptors for which little information was available, EPA decided to wait for further study to reconsider these contaminants in the future. As with pesticides, EPA believes that suspected endocrine disruptors should be considered in the context of an improved approach for selecting contaminants for future CCLs. This enables the Agency to use a more refined and improved approach in evaluating these contaminants.

• *Other emerging contaminants:* Includes additional contaminants of concern based on current research on occurrence and relative health effects risk factors, and whether the contaminants could be identified by analytical methods used in measuring other priority UCMR contaminants.

2. Establishing Priorities for UCMR 2

Of the 200-plus contaminants initially identified, EPA retained only those contaminants that met the following criteria: (1) Pesticides on the list must be currently registered for use in the United States; (2) all contaminants must have an analytical reference standard (pure compound) available; and (3) the analytical method must be available. Based on these criteria, the list was reduced to approximately 127 contaminants.

EPA further prioritized this list of contaminants as follows. The relative health effects screening was considered as part of EPA's identification of contaminants for monitoring under UCMR 2 (the relative effects screening and prioritization process is discussed and explained in next section). Through this prioritization process, 26 contaminants have been identified for UCMR 2 monitoring. At the current time, EPA does not expect to add contaminants to reach the statutory maximum of 30 contaminants. However, if other emerging contaminant(s) advance in importance during the first part of UCMR 2 monitoring, EPA will consider an amendment that would add up to four additional contaminants for monitoring in a later phase of the cycle. The remainder of this section discusses the specific selection of contaminants that EPA is proposing for UCMR 2 monitoring.

a. *Health Effects Prioritization Approach.* In identifying contaminants for monitoring under the UCMR program, potential human health effects are an important consideration. Therefore, after compiling a broad list of potential UCMR contaminants, EPA's next step was to develop a process to prioritize these contaminants by estimating their relative adverse health effects. EPA first collected existing health effects information, including Reference Dose (RfD), Tolerable Daily Intake (TDI), Acceptable Daily Intake (ADI), Cancer Unit Risk, Cancer Classification, and Median Lethal Dose (LD_{50}). Using this information, EPA developed a screening system to rank contaminants into high, medium, and low relative priorities.

In developing the relative rankings, EPA recognized two tiers of data for the assessment of non-cancer toxicity, based on applicability to human health effects: (1) RfD (and its equivalents); and (2) LD_{50}. The RfD and equivalent measures such as TDI and ADI are doses that are expected to have no measurable health effects on the human population, including sensitive populations. These levels are based on expert judgment of the available research data. The LD_{50}, on the other hand, is the result of observation of effects in experimental studies (*i.e.,* the concentration at which 50% of experimental animals die) and has not been extrapolated for application to human populations. Many compounds have measured LD_{50} values, but significantly fewer have calculated RfDs. In prioritizing compounds for inclusion in UCMR, EPA refers to RfD (and equivalent data) as ''potency data'', while LD_{50} data are referred to as ''toxicity data.''

As with the two tiers of data for non-cancer toxic effects, cancer information is analogously divided into two tiers. The higher tier of data, known as ''Unit Risk,'' represents the risk of developing cancer from a given drinking water concentration. The second tier of data, the ''Cancer Classification,'' categorizes the likelihood of a compound contributing to the human cancer burden and is a purely qualitative measure. Thus, it is generally less informative than Unit Risk data.

RfDs were typically obtained from EPA's Integrated Risk Information System (IRIS) or the Office of Pesticide Programs' Reregistration Eligibility Decisions (REDs). The ADIs were typically identified through the International Programme on Chemical Safety or the European Agency for the Evaluation of Medicinal Products Web sites. TDIs were identified through World Health Organization and the Netherlands Institute of Health Sciences sources. If an RfD or equivalent could not be identified, attempts were made to obtain an oral LD_{50} or other relevant information from sources such as the Hazardous Substances Database (HSDB) and primary literature. Cancer Unit Risk information was typically obtained from IRIS or REDs, while cancer classifications were found in IRIS, REDs, and from the International Agency for Research on Cancer (IARC).

To develop a ranking for each contaminant, compounds with potency data were assigned values from 1 to 10 based on equations derived empirically from the distribution of RfDs for the compounds listed on IRIS. Details concerning the derivations of these equations are contained in a support document titled ''Estimating Potency Scores: An Exercise'' (USEPA, 2004h). Contaminant prioritization estimates were discussed at a public stakeholder meeting held on October 29, 2003; the estimates are contained in an additional support document titled: ''UCMR 2: Contaminant Selection Rationale'' (USEPA, 2003e). One equation was derived for RfD and equivalent data, and one for cancer Unit Risk data. The distribution of RfD values was log-normally distributed, and the following equation was used to score compounds:

$$\text{Non-cancer risk} = 10 - (\text{rounded } \log_{10} \text{RfD} + 7)$$

To score compounds on a relative scale of 1 to 10, EPA examined the distribution of unit risks for the compounds found in the ''2002 Drinking Water Standards and Health

Advisories'' (USEPA, 2002a), and used the following equation:

Cancer Risk = 10 − ((rounded $\log_{10}$ 10^{-4} cancer risk) + 6)

Contaminants with resulting scores from each of these equations of 1–3 were considered relatively lower priority, those with scores of 4–6 were considered of medium relative priority, and scores of 7–10 were considered to be of high relative priority. In the case of compounds for which both cancer and non-cancer data were available, the data associated with the highest relative score were used for prioritization.

Compounds with toxicity data were ranked by a separate system based on $LD_{50,}$ and this ranking was modified by cancer classification where possible. Exhibit 3 summarizes the criteria that were used to rank compounds by $LD_{50.}$

EXHIBIT 3.—MEDIAN LETHAL DOSE AND CORRESPONDING TOXICITY RANKING

Relative toxicity ranking	LD_{50} data
Very High	≤1 mg/kg [1]
High	>1 mg/kg − ≤50 mg/kg
Moderate	>50 mg/kg − ≤500 mg/kg
Slight	>500 mg/kg − ≤5 g/kg [2]

[1] mg/kg = milligram per kilogram.
[2] g/kg = gram per kilogram.

Additionally, if a chemical meeting the ''slight'' criteria was also noted as ''possibly carcinogenic to humans'' (Group 2B), the chemical was moved up one level to ''moderate.'' For example, 2,2′,4,4′,5,5′-hexabromobiphenyl toxicity should be categorized as slight based on an identified oral LD_{50} in rats of 21,500 milligrams per kilogram (mg/kg). However, because IARC categorized this chemical as ''possibly carcinogenic to humans,'' it now is categorized as moderate.

b. *Selections Based on UCMR 1 Reserved Contaminants List.* One of EPA's priorities for UCMR 2 is to monitor for contaminants that were identified as priorities for monitoring during UCMR 1, but were ''reserved'' because analytical methods were not available at the time. Applying these criteria, two UCMR 1 ''reserved'' contaminants are priorities for UCMR 2: alachlor ethane sulfonic acid (alachlor ESA) (and other acetanilide pesticide degradation products) and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), an explosive. The first is a contaminant group that is comprised of multiple contaminants, as further discussed in this section. Both alachlor ESA (and other degradation products of acetanilide pesticides) and RDX were included on UCMR 1, List 2, but because the required analytical methods were not available in time for UCMR 1 monitoring they were listed as ''reserved.''

i. Alachlor ethane sulfonic acid (ESA) and Other Degradation Products of Acetanilide Pesticides—List 2.

Based on the rationale provided below, EPA is proposing that the following six degradation products of acetanilide pesticides and their parent compounds be part of the UCMR 2, List 2, Screening Survey monitoring:

- Acetochlor
- Acetochlor ESA
- Acetochlor OA
- Alachlor
- Alachlor ESA
- Alachlor OA
- Metolachlor
- Metolachlor ESA
- Metolachlor OA

The proposed List 2 analytes include the ethane sulfonic acid (ESA) and oxanilic acid (OA) degradation products of the three highest-use parent acetanilide compounds: metolachlor, alachlor, and acetochlor (see Exhibit 4). In addition, EPA is proposing that List 2 include the parent compounds, acetochlor, alachlor and metolachlor, because one possible option for regulating these compounds and their degradates would be to establish maximum contaminant levels (MCLs) for the total of each parent plus its respective metabolites.

There are a number of reasons why EPA has prioritized alachlor ESA (and other degradation products of acetanilide pesticides) for inclusion in UCMR 2 monitoring. This group of acetanilide degradation products was originally listed under the CCL 1 occurrence priorities and then included as part of UCMR 1, List 2 as ''reserved''; thus the group is a top priority for UCMR 2 monitoring. In addition, ambient water monitoring data indicate that occurrence of the acetanilide degradation products (ESA and OA) is more widespread than that of the parent compounds.

Inclusion of the parent acetanilides on List 2 monitoring will potentially allow EPA to learn more about the extent of decomposition of the parent compounds, and about levels of co-occurrence of the parents and their degradation products. The parent acetanilides are widely used herbicides applied for weed control on corn, soybean, and other crops (see Exhibit 4). Acetochlor and metolachlor were both included on the final CCL 1 priority list. Acetochlor was identified as a CCL 1 occurrence priority, and was monitored under UCMR 1, List 1, Assessment Monitoring. Metolachlor and its degradation products were identified in the list of candidates for regulatory determination under the CCL 1 prioritization process. However, EPA has since determined that available health effects and occurrence information were insufficient to support a regulatory determination.

Health effects studies have shown that chronic oral exposure to parent acetanilide herbicides may have effects such as increased salivation, decreased body weight, cellular/kidney/testicular pathology, enlarged liver, and anemia in animal subjects (USEPA, 2003d). RfDs established by EPA for these parent herbicides are 0.01 milligrams per kilograms per day (mg/kg/day) for alachlor, 0.02 mg/kg/day for acetochlor, and 0.15 mg/kg/day for metolachlor (USEPA, 2003d). Based on animal studies, the carcinogenic potentials of the parent acetanilide herbicides in humans are estimated to be: acetochlor and metolachlor, ''possible carcinogen'' (59 FR 13654, March 23, 1994 (USEPA, 1994); 61 FR 10681, March 15, 1996 (USEPA, 1996a); and USEPA, 2003d); and alachlor, ''probable carcinogen'' (USEPA, 2004a). The NPDWR for alachlor includes an maximum contaminant level goal of zero (due to classification as a probable carcinogen) and an MCL of 0.002 milligrams per liter (mg/L). EPA notes that alachlor is currently regulated under the National Primary Drinking Water Standards. EPA is proposing the collection of alachlor occurrence data in UCMR 2 concurrent with the collection of data for the alachlor degradation products to determine the degree of correlation between the parent compound and degradate occurrence.

EXHIBIT 4.—COMPARISON OF ACETANILIDE HERBICIDES USE [1]

Compound	Year registered	~Early 1990s annual use (million lb a.i.) –EPA [2]	~1992 annual use (million lb a.i.) –NCFAP [3]	~1997 annual use (million lb a.i.) –NCFAP	~1991–1995 annual use (million lb a.i.) –USGS [4]	~1995–1998 annual use (million lb a.i.) –USGS [4]
Metolachlor	1976	59 (1987–1993)	59.4	67.3	57.9	66.9
Alachlor	1969	29.3–44.6 (1993–1995)	51.6	15.2	25.7	15.1
Acetochlor	1994	—	—	32.6	23.8	32.6
Propachlor	1964	2.1 (1987–1996)	4.3	0.9	3.9	0.9
Dimethenamid	1993	—	—	6.0	2.6	6.0
Flufenacet	1998	—	—	—	—	—

[1] "—" = substance not in use; a.i. = active ingredient.
[2] EPA: *http://cfpub.epa.gov/oppref/rereg/status.cfm?show=rereg*.
[3] National Center for Food and Agricultural Policy (NCFAP): *http://www.ncfap.org/*.
[4] United States Geological Survey (USGS), national maps: *http://ca.water.usgs.gov/pnsp/*.
Note: Based on use amounts, EPA is proposing to monitor for the ESA and OA degradates of the three highest-use parent compounds: acetochlor, alachlor, and metolachlor. In addition, EPA is proposing to monitor for acetochlor, alachlor, and metolachlor.

ii. Explosives—List 1.

Based on the rationale provided below, EPA is proposing that the following three explosives compounds be part of the UCMR 2, List 1, Assessment Monitoring:

- Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
- 2,4,6-trinitrotoluene (TNT)
- 1,3-dinitrobenzene

RDX was a CCL 1 occurrence priority and was included on UCMR 1, List 2 as ''reserved,'' because analytical methods were not available in time for rule implementation. EPA has since developed a method for determining explosives in drinking water, thus allowing RDX to be included under UCMR 2 monitoring. RDX is absorbed by oral, dermal, and inhalation routes, and has been documented to cause central nervous system effects such as seizures, disorientation, nausea, restlessness, and lethargy. In addition, temporary anemia and leukocytosis after ingestion of RDX has been observed (ATSDR, 1995b). EPA has derived a chronic oral RfD for RDX of 0.0003 mg/kg/day, based on prostate inflammation observed in rats in a two-year feeding study (USEPA, 2003d), and has classified RDX as a possible human carcinogen (Group C), based on adenomas and carcinomas in female mice (USEPA, 2003d).

The ''explosives'' method can also be used to measure concentrations of at least 13 other contaminants in the same compound class (see Exhibit 5). A few that can be detected by this method were already monitored under UCMR 1 (nitrobenzene, 2,4-dinitrotoluene, and 2,6-dinitrotoluene). Of the remaining contaminants analyzed with the explosives method, the two with the highest relative health risk rankings are 2,4,6-trinitrotoluene (TNT) (possible carcinogen) and 1,3-dinitrobenzene (high relative health risk ranking). TNT and 1,3-dinitrobenzene were also identified during the CCL 1 development process on the working group's initial list of chemical contaminants considered during the development of the draft CCL (62 FR 52194 at 52201, October 6, 1997 (USEPA, 1997)).

TNT has been detected in surface and ground water samples that were collected near munitions facilities (ATSDR, 1995c). TNT typically co-occurs with RDX (Burrows, 1982). EPA has classified TNT as a possible human carcinogen (Group C) based on urinary bladder papilloma and carcinoma observed in female rats and activity observed in Salmonella, with and without metabolic activation (USEPA, 2003d). Based on TNT's co-occurrence with RDX and its possible carcinogenicity, EPA is proposing to include TNT for monitoring under UCMR 2.

1,3-dinitrobenzene is the only one of the explosive contaminants considered for UCMR 2 to have been assigned a ''high'' relative health risk ranking. The major clinical manifestations of oral exposure to 1,3-dinitrobenzene are hematologic, neurologic, endocrine, and reproductive (ATSDR, 1995a). EPA has derived a chronic oral RfD for this compound of 0.0001 mg/kg/day, based on increased weight of the spleen (USEPA, 2003d). EPA believes that a likely route of exposure to this compound is ingestion of contaminated drinking water (ATSDR, 1995a). Though no nationwide survey of occurrence has been conducted, local water and soil studies provide some indication of 1,3-dinitrobenzene occurrence in water. This compound has been detected in water and soil at some Army ammunition plants, including detection in ground water samples collected at an ammunition plant in Louisiana at concentrations ranging from 1.2 to 195 micrograms per liter (µg/L) (ATSDR, 1995a). It has also been found in 12 of the 1,397 hazardous waste sites on the National Priorities List; however, the total number of sites tested for 1,3-dinitrobenzene is unknown (ATSDR, 1995a). In a survey of ground water at 32 military installations, Walsh and colleagues (USEPA, 1999a) detected 1,3-dinitrobenzene in 13 percent of the 812 samples analyzed, with maximum concentrations of 8.7 µg/L and a median concentration of 0.78 µg/L. As the most toxic of the remaining explosives, EPA believes that 1,3-dinitrobenzene should be included for monitoring under UCMR 2.

EXHIBIT 5.—ANALYTES INCLUDED IN THE EXPLOSIVES METHOD (EPA 529)

Status	Analyte	Relative health rank [1]
To be monitored under UCMR 2, List 1	hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	M(C)
	2,4,6-trinitrotoluene (TNT)	M(C)
	1,3-dinitrobenzene	H

EXHIBIT 5.—ANALYTES INCLUDED IN THE EXPLOSIVES METHOD (EPA 529)—Continued

Status	Analyte	Relative health rank [1]
Not Listed on CCL 1 and Not included on UCMR 2.	1,3,5-trinitrobenzene	M
	2,4,6-trinitrophenylmethylnitramine (Tetryl)	M
	2-amino-4,6-dinitrotoluene	L(S)
	2-nitrotoluene	L(S)
	3,5-dinitroaniline	na
	3-nitrotoluene	M(M)
	4-amino-2,6-dinitrotoluene	L(S)
	4-nitrotoluene	L(S)
Listed on CCL 1 and Monitored under UCMR 1.	2,4-dinitrotoluene	M
	2,6-dinitrotoluene	M
	nitrobenzene	M

[1] Relative Health Effects Rankings include: H = high priority based on potency data (RfD or equivalent); M = medium priority based on potency data (RfD or equivalent); M(C) = medium priority based on potency data (cancer unit risk); M(M) = medium priority based on toxicity data (contaminants with Moderate (M) toxicity are contained in this category); L(S) = low priority based on toxicity data (contaminants with Slight (S) toxicity are contained in this category); (na) = not available.

c. *Selections from UCMR 1 Contaminants List.* Perchlorate, the salts of which have a number of industrial applications, is primarily used in the form of ammonium perchlorate, an oxidizer in solid fuels that are used to power rockets, missiles, and fireworks. In 1997, a method was developed which greatly lowered the method reporting limit (MRL) for perchlorate from approximately 400 µg/L, down to 4 µg/L. Subsequent monitoring found perchlorate in ground water and drinking water at and above this level. Perchlorate was listed on EPA's CCL 1 out of concern for its occurrence and possible health effects and was monitored under UCMR 1 Assessment Monitoring using Method 314.0 (USEPA, 1999e), with a MRL of 4 µg/L.

EPA has improved the measurement capabilities of the perchlorate methods. Recently developed methods (EPA Method 314.1 (USEPA, 2004b); EPA Method 331.0 (USEPA, 2004c); and EPA Method 332.0 (USEPA, 2004d)) would allow collection of occurrence data with a substantially lower reporting level than that specified during UCMR 1. In addition, since publication of Method 314.0, new instrumentation has been made commercially available that can, using this method, achieve the MRL of 0.57 µg/L while meeting all of the quality control criteria of the method. Since Method 314.0 permits flexibility in the eluent, chromatographic column, and suppressor that are used, this new instrumentation is allowed within the scope of the method. In this notice, EPA will refer to Method 314.0 using this new instrumentation, which can achieve the lower MRL as ''Method 314.0 enhanced.'' EPA estimates that the average cost per sample for the new methods will be about $150, compared to $75 per sample using the original Method 314.0.

The National Academy of Sciences (NAS) has recently completed a review of available perchlorate health effects research. Perchlorate can affect thyroid function because it is an ion that competitively inhibits the transport of iodide into the thyroid. EPA has adopted the NAS recommended reference dose of 0.0007 mg/kg per day, which translates into a drinking water concentration of 24.5 µg/L, assuming a 70 kg body weight and 2 liters per day consumption. This assumes, however, that 100% of exposure comes from drinking water. An important step for EPA in considering whether to regulate perchlorate in drinking water is to determine what portion of perchlorate exposure may come from food and other sources and what portion from drinking water (referred to as relative source contribution or RSC). A higher exposure from food would mean a lower exposure from drinking water that would still be consistent with the NAS recommended reference dose.

EPA is considering whether to collect additional data on drinking water occurrence for perchlorate and if so, what method(s) and MRL should be required. The Agency already has substantial occurrence data for perchlorate from UCMR 1 using the original Method 314.0, which allowed for measurement of perchlorate at concentrations down to 4 µg/L. However, to inform future decisions regarding perchlorate, EPA sees advantages to gathering additional data on perchlorate using the newer methods. This additional information would provide a more complete understanding of perchlorate's occurrence in drinking water. For large systems, the new monitoring data would supplement data already collected by these systems under UCMR 1, while for small systems, a different random sample would be monitored. Further, additional data at lower reporting levels could inform EPA's cost estimates for a potential regulation by identifying drinking water systems that may want, as a practical matter, to target a somewhat lower level than the MCL in their control strategies. Finally, EPA believes the new methods are more reliable and respond to comments about the potential for false positives in the original Method 314.0. At the same time, EPA recognizes that there are costs associated with this additional monitoring, most of which would be incurred by drinking water utilities and their customers. The cost of an additional round of monitoring using the original method 314.0, with an MRL of 4 µg/L, would have been about half of the cost associated with the new methods and lower MRL. EPA estimates the total cost for a second round of perchlorate monitoring using the new methods to be $4.4 million over five years, of which about $4 million would be incurred by large drinking water utilities (an average of $1,200 per utility serving 10,000 persons or more), and $434,000 would be paid by EPA to analyze samples for small systems. EPA requests comment on its proposal to include perchlorate on the UCMR 2 list and on the appropriate methods and reporting level.

d. Selection of Emerging Contaminants. Ongoing research has identified other emerging contaminants that EPA believes are important to include on the UCMR 2 Contaminant List.

i. Nitrosamines—List 2.

EPA is proposing to include the following six nitrosamines on the UCMR 2, List 2, Screening Survey:

- N-nitroso-diethylamine (NDEA)
- N-nitroso-dimethylamine (NDMA)
- N-nitroso-di-n-butylamine (NDBA)
- N-nitroso-di-n-propylamine (NDPA)

• N-nitroso-methylethylamine (NMEA)
• N-nitroso-pyrrolidine (NPYR)

These six compounds are all considered by EPA to be probable human carcinogens, and have been assigned high relative health effects rankings (USEPA, 2003d). Animal studies provide evidence that many nitrosamines, including all of those being proposed for UCMR 2, target the liver when ingested orally. Nitrosamines also produce carcinogenic effects in the esophagus, lung, nasal cavity, stomach, and elsewhere when administered to animal subjects in drinking water; and many nitrosamines target the liver when ingested orally (USEPA, 2003d). Nitrosamines are produced in small amounts for research purposes, and can form as intermediates and byproducts in chemical synthesis and the manufacture of rubber, leather, and plastics. Four of the six proposed nitrosamines (all except N-nitroso-methylethylamine and N-nitroso-pyrrolidine) are listed on the Toxics Release Inventory (TRI),[2] which requires reporting of releases to the environment and other waste management data. Nitrosamines can also form spontaneously in the environment by the reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by the action of nitrate-reducing bacteria. Common foods such as bacon and malt beverages can contain nitrosamines, and there is evidence that nitrosamines can form in the upper gastrointestinal tract (ATSDR, 1989). One nitrosamine, N-nitroso-dimethylamine (NDMA), has been shown to form in chlorinated or chloraminated water as a disinfection byproduct (DBP) (Choi *et al.*, 2002; Choi and Valentine, 2002a and 2002b; Mitch and Sedlak, 2002).

No nationwide data are available on nitrosamine occurrence in United States waters. However, other studies give an indication of likely occurrence. Since 1998, a number of NDMA detections have been reported in California ground water (CAEPA, 2002) and finished drinking water (CADHS, 2002) above the State's action level of 0.01 µg/L. The American Water Works Association Research Foundation recently collaborated with the Water Environment Research Foundation to fund a study on NDMA occurrence and behavior in raw, treated, and recycled water; however, the final report is not yet available.

Given evidence of the toxic nature of nitrosamines, and their potential occurrence in the environment (particularly NDMA in drinking water as a DBP), EPA proposes to include these six contaminants on the UCMR 2 list to learn more about their occurrence in drinking water.

ii. Others Identified in CCL 1 Process and Recent Reviews of Information on Emerging Contaminants—List 1.

The following additional contaminants are proposed for UCMR 2, List 1, Assessment Monitoring based on evaluation of CCL 1 lists and methods research.

• Dimethoate
• Terbufos sulfone
• Five flame retardants

Four polybrominated diphenyl ethers:
2,2′,4,4′-tetrabromodiphenyl ether (BDE–47)
2,2′,4,4′,5-pentabromodiphenyl ether (BDE–99)
2,2′,4,4′,5,5′-hexabromodiphenyl ether (BDE–153)
2,2′,4,4′,6-pentabromodiphenyl ether (BDE–100)

One polybrominated biphenyl:
2,2′,4,4′,5,5′-hexabromobiphenyl (245-HBB)

There are a variety of reasons these contaminants are being proposed for monitoring under UCMR 2. Terbufos sulfone was identified through the CCL 1 development process as a deferred pesticide. Dimethoate and the flame retardants are other contaminants that can be measured by the same analytical method that is proposed for terbufos sulfone. Terbufos sulfone and dimethoate have both been assigned ''high'' relative health effects rankings. Flame retardants are being proposed by EPA for UCMR monitoring because of recent concern that these have become widely occurring environmental contaminants (Darnerud *et al.*, 2001).

Although little is known regarding the health effects of terbufos sulfone, EPA has established an RfD of 0.00005 mg/kg/day for the parent compound, terbufos, based on a no observable adverse effect level for plasma cholinesterase inhibition (USEPA, 1999b). Terbufos was monitored under UCMR 1. Similar to the acetanilide degradates, however, EPA is concerned that terbufos sulfone will be found more commonly in the environment than its parent compound, based on the rapid decomposition of the parent compound. Such rapid decomposition combined with concern regarding the health effects of the parent compound terbufos justify determining the occurrence of terbufos sulfone in drinking water.

The method EPA proposes for the analysis of terbufos sulfone can measure many other contaminants (over 40). However, EPA used relative health effects information to identify the highest priorities and to comply with the statutory limit of 30 contaminants per UCMR monitoring cycle. Of the remaining compounds that could be measured using gas chromatography/mass spectrometry (GC/MS), the technology used in Method 527, dimethoate is being proposed for UCMR 2 monitoring because it received a ''high'' ranking in EPA's health effects screening (USEPA, 2004h). Dimethoate is a TRI chemical that is produced for use on cotton and other field crops, orchard crops, vegetable crops, in forestry, and residential uses (USEPA, 1999f).

Dimethoate is rapidly absorbed, metabolized, and eliminated in rats by oral or intravenous routes of administration (USEPA, 1999d). This compound is a cholinesterase inhibitor and exerts its major toxic effects through overstimulation of the nervous system (USEPA, 2003a). Health effects include headache, weakness, coma, and death from respiratory failure (HSDB, 1986). Dimethoate has been classified as a ''possible human carcinogen'' and EPA has established an RfD for this compound of 0.0002 mg/kg/day (USEPA, 2003d). No national data is available on the occurrence of dimethoate in waters of the United States; however, two local studies provide an indication of limited occurrence (USEPA, 1999f).

Synthetic flame retardants are among the other contaminants that are measured by EPA Method 527. Flame retardants, such as polybrominated diphenyl ethers (PBDEs) and polybrominated biphenyls (PBBs), are added to plastics used in a variety of consumer products such as computer monitors, televisions, textiles, and plastic foams. Production of PBBs ended in 1976 in the United States following an incident of significant agricultural contamination in 1973, but PBDEs are still produced and used in the United States. Flame retardants have been measured at low levels in air, sediments, animals, and food and are believed to be widely occurring in the environment (Darnerud *et al.*, 2001). Recent data also indicate that total levels of flame retardants are rapidly

[2] The Toxics Release Inventory (TRI) is a publicly available EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as Federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 and expanded by the Pollution Prevention Act of 1990. Generally, reporting is required for facilities in covered industries with more than 10 full-time employees that annually manufacture or process more than 25,000 pounds, or use more than 10,000 pounds of a toxic chemical. More information is available at the TRI Program Web site at: *http://www.epa.gov/tri.*

increasing and that most people are exposed to low levels of these contaminants (Hites, 2004). Findings from animal studies suggest thyroid and liver effects, as well as possible reduced immune system function and neurobehavioral alteration (ATSDR, 2002).

3. Other Considerations in Selecting Contaminants

EPA has identified nine analytical methods and 26 priority contaminants for UCMR 2 monitoring. EPA considered many more contaminants and methods for UCMR 2. Some of these contaminants were given strong consideration but were not included as part of the proposed UCMR 2, as discussed in the following section.

a. Triazine Chlorodegradates and Parent Compounds. While they are not part of today's proposal, EPA invites comments on the possibility of UCMR 2 monitoring for three triazine chlorodegradates and three of their parent compounds, as follows:

- Desethylatrazine (DEA)
- Desisopropylatrazine (DIA)
- Diaminochlorotriazine (DACT) [3]
- Atrazine
- Simazine
- Propazine

EPA is interested in these chlorodegradates and three parent compounds because the Agency is conducting a cumulative risk assessment for the chlorodegradates as a group with atrazine, simazine and propazine. The ''triazines and degradation products of triazines'' are also CCL 1 contaminants.

Atrazine and simazine are regulated contaminants with MCLs of 3 µg/L and 4 µg/L, respectively. Propazine was a cancelled pesticide based on its contamination of ground water but was reintroduced for greenhouse uses only (it is now used on container grown ornamentals in greenhouses); however, EPA is currently evaluating a proposal to use propazine for the control of broadleaf weeds and annual grasses in sorghum, a use previously listed on labels, but voluntarily removed prior to 1990. Propazine was identified through the CCL 1 development process as a deferred pesticide. A fourth triazine, cyanazine, is not being addressed since its production and use were phased out between 1996 and 2002.

Atrazine, simazine and propazine metabolize into various chlorodegradation products of which Desethylatrazine (DEA), Desisopropylatrazine (DIA), and Diaminochlorotriazine (DACT) are the most significant. Atrazine forms all three of these chlorodegradates; whereas, simazine, a diethyl analogue of atrazine, degrades to DIA and DACT, and propazine, a diisopropyl analogue of atrazine, degrades to DACT and DEA (Scribner *et al.*, 2000). In addition, ambient water monitoring data indicate that concentrations of these chlorodegradates in water may be equal to, or even exceed, concentrations of atrazine (and other parent compounds) (Scribner *et al.*, 2000). While atrazine and simazine are already regulated under the National Primary Drinking Water Standards, EPA is considering UCMR monitoring for these parent compounds concurrent with the collection of UCMR data for their degradation products to determine the degree of correlation between the occurrence of the parents and their degradation products.

EPA is currently developing a liquid chromatography/tandem mass spectrometry (LC/MS/MS) method to analyze the parent triazines and these chlorodegradates and expects that method to be available within the next year. Depending on method development progress, EPA's further assessment of the relative health effects of triazine degradates, and comments received pursuant to today's proposed regulation, EPA may consider adding triazines and degradates to the Screening Survey for UCMR 2. Because only 30 analytes can be monitored during any one cycle of the UCMR program, EPA recognizes that the addition of the triazines and degradates to the Screening Survey may require the elimination of other contaminants from UCMR 2. Contaminants that EPA is considering in this regard may include one or more of the acetanilide pesticides or degradation products (see section III.A.2.b.i), which are also measured using an LC/MS/MS method. EPA invites comments on whether the concurrent use of two similar methods may strain laboratory capacity.

b. Other Contaminants Considered. EPA had originally identified over 200 contaminants as potential UCMR 2 priorities. Many were eliminated based on specific criteria, as discussed in section III.A.2 of this action (including the requirements that pesticides must be registered, reference standards must be available, and the analytical method must be available to include in this proposed action). Those eliminated or deferred due to other considerations are worthy of further mention because of particular public interest. These contaminants, and the reasons for their exclusion from today's proposed action, include:

- *Aeromonas:* The UCMR 1 Screening Survey for Aeromonas indicates that it warrants further evaluation. Data analyzed thus far have identified Aeromonas at the genus level. Identification and analysis of pathogenic strains for some of the small system samples is underway but have not been completed as of the publication of this proposed action. EPA believes that it is premature to propose additional monitoring for Aeromonas. The evaluation of the speciation of the isolates collected during UCMR 1, and the development of a more routine and affordable species-specific method will support future monitoring, if deemed appropriate.
- *Cyanotoxins:* While extensive analytical methods development was conducted for one class of cyanobacteria toxins, microcystins, in preparation for UCMR 2, adequate accuracy in surface waters with total organic carbon levels of 2 mg/L and higher has not yet been demonstrated. Two other cyanotoxins—anatoxin A, and cylindrospermopsin—were included in the initial method development. However, these were not compatible with the microcystin method being developed, and other analytical methods will not be available in time for UCMR 2 monitoring. Therefore, none of the cyanobacteria toxins are being proposed for monitoring at this time. However, further analytical methods development is continuing.
- *Diuron:* EPA considered whether Diuron would be a good candidate to include in UCMR 2 Assessment Monitoring. Interim monitoring results from the UCMR 1 Screening Survey have shown only one detection of Diuron. Because this suggests very low occurrence in drinking water, and because other contaminants are of greater relative health effects concern, Diuron was not established as a priority contaminant for UCMR 2 monitoring.
- *Ethylene thiourea:* While extensive analytical methods development was conducted for ethylene thiourea in preparation for UCMR 2, reproducible recoveries have not yet been demonstrated. Therefore, ethylene thiourea is not being proposed for monitoring at this time. However, further analytical methods development is continuing.
- *Mirex and TBBPA:* Mirex was considered for UCMR 2 monitoring and was found to have a ''high'' relative health effects ranking. Though it can be measured using the GC/MS method, Mirex has not been used or produced in the United States since 1978. For this

[3] Another commonly used name for DACT is desthyldesisopropylatrazine.

reason, EPA has not included Mirex on the list of UCMR 2 priorities. In addition, tetrabromobisphenol A (TBBPA), a brominated flame retardant, was initially considered for inclusion on the list of contaminants to be measured using GC/MS, EPA Method 527. However, TBBPA was found to be incompatible with this method, and is therefore not included on the list of UCMR 2 priorities.

B. What Analytical Methods Will Be Used for Monitoring?

The analytical methods that are being proposed for use in UCMR 2 and the contaminants that they measure are listed in Exhibit 6. EPA has conducted both literature searches, as well as searches of available consensus method organizations' publications for additional analytical methods that could be used to support this monitoring. No such additional methods were identified that meet the requirements of this proposed action. All of the analytical methods proposed use either mass spectrometry or tandem mass spectrometry (*i.e.*, MS/MS) for the detection of the analytes, with the exception of EPA Methods 314.0 enhanced and 314.1 (USEPA, 1999e and USEPA, 2004b, respectively).

EPA is proposing that all positive occurrences of perchlorate (*i.e.*, those at or above the MRL of 0.57 μg/L), determined using the Methods 314.0 enhanced or 314.1, must be confirmed through the use of a second chromatographic column, as detailed in Method 314.1, or by MS or MS/MS, using EPA Methods 331.0 or 332.0 (USEPA, 2004c and USEPA, 2004d, respectively). EPA requests comment on the level at which positive occurrences of perchlorate must be confirmed.

By design of the UCMR program, UCMR contaminants measured by analytical techniques that are commonly available are assigned to List 1, Assessment Monitoring (EPA Methods 314.0 enhanced, 314.1, 331.0, 332.0, 527, and 529). While most of these are newly developed analytical methods, the techniques they employ are in common use by drinking water laboratories. These methods are assigned to Assessment Monitoring because this is the largest component of UCMR, with monitoring conducted by a sample of 800 systems serving 10,000 or fewer people, and all systems serving more than 10,000 people (approximately 3,200 systems).

UCMR contaminants that are measured by analytical methods that have been recently developed and use techniques that are not commonly used in drinking water analyses are assigned to the List 2, Screening Survey. These less common methods are generally more appropriate for the Screening Survey because fewer laboratories will be capable of conducting such analyses, and the smaller scale monitoring under the Screening Survey should reduce potential laboratory capacity issues. However, in order to monitor for the parent compounds of the acetanilide degradates, Method 525.2, which is commonly used for regulated monitoring, is also being included for List 2 monitoring. During the Screening Survey, a sample of 800 systems serving 100,000 or fewer people and all (approximately 320) systems serving more than 100,000 people would monitor. Exhibit 6, summarizes the UCMR 2 methods and associated contaminants.

EXHIBIT 6.—ANALYTICAL METHODS PROPOSED FOR UCMR 2 MONITORING

Analytical method [1]	Contaminant	UCMR 2 List
EPA Method 314.0 enhanced (IC/Conductivity) EPA Method 314.1 (IC/Conductivity) EPA Method 331.0 (LC/MS or LC/MS/MS) EPA Method 332.0 (IC/MS or IC/MS/MS)	Perchlorate	List 1, Assessment Monitoring: 1 contaminant.
EPA Method 527 (SPE/GC/MS)	2,2',4,4'-tetrabromodiphenyl ether (BDE–47) 2,2',4,4',5-pentabromodiphenyl ether (BDE–99). 2,2',4,4',5,5'- hexabromobiphenyl (245-HBB). ..... 2,2',4,4',5,5'-hexabromodiphenyl ether (BDE–153). 2,2',4,4',6-pentabromodiphenyl ether (BDE–100). Dimethoate. Terbufos sulfone.	List 1, Assessment Monitoring: 7 contaminants.
EPA Method 529 (SPE/GC/MS)	1,3-dinitrobenzene 2,4,6-trinitrotoluene (TNT) Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	List 1, Assessment Monitoring: 3 contaminants.
EPA Method 521 (SPE/GC/CI/MS/MS)	N-nitroso-diethylamine (NDEA) N-nitroso-dimethylamine (NDMA) N-nitroso-di-n-butylamine (NDBA) N-nitroso-di-n-propylamine (NDPA). N-nitroso-methylethylamine (NMEA). N-nitroso-pyrrolidine (NPYR).	List 2, Screening Survey: 6 contaminants.
EPA Method 535 (SPE/HPLC/MS/MS)	Acetochlor ESA Acetochlor OA Alachlor ESA Alachlor OA. Metolachlor ESA. Metolachlor OA.	List 2, Screening Survey: 6 contaminants.
EPA Method 525.2 (SPE/GC/MS)	Acetochlor Alachlor Metolachlor	List 2, Screening Survey: 3 contaminants.

EXHIBIT 6.—ANALYTICAL METHODS PROPOSED FOR UCMR 2 MONITORING—Continued

Analytical method [1]	Contaminant	UCMR 2 List
Total of 26 UCMR 2 contaminants		

[1] EPA Method 314.0: Determination of Perchlorate in Drinking Water Using Ion Chromatography (USEPA, 1999e). Note: Since Method 314.0 was published in 1999 to support UCMR 1 monitoring at an MRL of 4.0 μg/L, new instrumentation has been made commercially available from Metrohm Peak that can, using this method, achieve the MRL of 0.57 μg/L as called for by this proposed regulation, while meeting all of the quality control criteria of the method. Because enhanced Method 314.0 permits flexibility in the eluent, chromatographic column, and suppressor that are used, this new instrumentation would be permitted within the scope of the original method. Therefore, enhanced Method 314.0 is being proposed for use in this regulation.

EPA Method 314.1: Determination of Perchlorate in Drinking Water Using Inline Column Concentration/Matrix Elimination Ion Chromatography with Suppressed Conductivity Detection (USEPA, 2004b).

EPA Method 331.0: Determination of Perchlorate in Drinking Water by Liquid Chromatography Electrospray Ionization Mass Spectrometry (USEPA, 2004c)

EPA Method 332.0: Determination of Perchlorate in Drinking Water Using Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry (USEPA, 2004d).

EPA Method 521: Determination of Nitrosamines in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography with Large Volume Injection and Chemical Ionization Tandem Mass Spectrometry (MS/MS) (USEPA, 2004e).

EPA Method 525.2: Determination of Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (USEPA, 1995).

EPA Method 527: Determination of Selected Pesticides and Flame Retardants in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS) (USEPA, 2004f).

EPA Method 529: Determination of Explosives and Related Compounds in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS) (USEPA, 2003c).

EPA Method 535, Revision 1.1: Measurement of Chloroacetanilide and Other Acetamide Herbicide Degradates in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) (USEPA, 2004g).

C. How Were These Analytical Methods Developed?

EPA developed the proposed analytical methods at two laboratories in Cincinnati, Ohio: The Office of Water, Office of Ground Water and Drinking Water's Technical Support Center and the Office of Research and Development, National Exposure Research Laboratory's Chemical Exposure Research Branch. Additional methods development support was provided by: The Dionex Corporation, Sunnyvale, California; Metrohm Peak, Houston, Texas; Office of Research and Development's Ground Water and Ecosystems Restoration Division, Ada, Oklahoma; and EPA's Region 1, New England Laboratory, Chelmsford, Massachusetts.

Extensive method testing was performed for each of the analytical methods developed for this proposed action. Each step of each method was tested for robustness and to evaluate the amount of user flexibility that could be permitted for that step. Additional details concerning this testing, beyond that included in each method, are contained in methods research reports. These reports are available for each newly developed method being proposed in the docket for this action. However, no such report is available for Method 314.0, which was developed for UCMR 1, or for Method 525.2, which was developed in 1995. Wherever feasible, EPA permitted the maximum user flexibility commensurate with maintaining data quality. In addition, each method was tested in a second or, for some methods, a third laboratory. These second and third laboratory studies were designed to test the precision and accuracy of each method in reagent water and in different drinking water matrices, as well as the ease of use of the method and the clarity of the written instructions of the method. Reports containing the data developed during these second and third laboratory studies are also available in reports included in the docket for this action for each newly developed method being proposed. Similar data was generated in to support the proposed action of Method 314.0. These data are also included in the docket for review.

The methods developed for UCMR 2 analyses were peer reviewed in accordance with the Agency's peer review guidelines detailed in the ''Science Policy Council Handbook, Peer Review'' (USEPA, 2000b). Methods 314.0 and 525.2, which were developed prior to 2000, were peer reviewed using similar criteria.

D. How Were Minimum Reporting Levels Determined?

Minimum Reporting Levels (MRLs) represent an estimate of the lowest concentration of a compound that can be quantitatively measured by a group of experienced drinking water laboratories. EPA is proposing that all laboratories providing UCMR 2 analysis be required to demonstrate their ability to measure each compound at the MRL proposed for that compound in § 141.40(a)(3) of today's action. EPA has developed a protocol for developing MRLs based on Lowest Concentration MRLs (LCMRLs) that were determined by each laboratory that developed or subsequently tested the methods listed in today's action. LCMRLs represent the lowest concentration of a compound that can be quantitatively determined in each individual laboratory. EPA invites comments on the LCMRL/MRL approach and notes that in a related action, EPA's Office of Water is about to begin an evaluation of a wide range of detection and quantitation approaches under the Federal Advisory Committee Act (FACA) process. EPA expects to consider the comments and feedback from this FACA process to the extent possible in the development of the UCMR 2 final rule.

MRLs have previously been determined by analytical laboratories using expert professional judgement, but standard criteria for MRL determination have not been established. In both the Information Collection Rule (61 FR 24354, May 14, 1996 (USEPA, 1996b)) and UCMR 1, EPA specified MRLs and a requirement for recovery at the MRL so that data quality was documented daily. In the interest of greater consistency, EPA has developed a statistical protocol for single-laboratory determinations of LCMRLs using linear regression and prediction intervals. This approach, described in detail in the report titled ''Statistical Protocol for the Determination of the Single-Laboratory Lowest Concentration Minimum Reporting Level (LCMRL) and Validation of the Minimum Reporting Level (MRL)'' (USEPA, 2004j), has been evaluated through expert peer review conducted in accordance with the Agency's formal peer review process and through the performance of a pilot-scale interlaboratory study. The

proposed protocol is available to the public, and can be found at: *http://www.epa.gov/safewater/methods/sourcalt.html*.

Details of this pilot-scale interlaboratory study are contained in a report titled ''Evaluation of the Lowest Concentration Minimum Reporting Level (LCMRL) and the Minimum Reporting Level (MRL) Primary Analyte Analysis'' (USEPA, 2004i). An evaluation of the procedures used in this proposed action, and other tested procedures to determine MRLs from LCMRLs, are detailed in Chapter 4 of the report. The guidelines and procedures for using LCMRLs in establishing MRLs for UCMR 2 are described later in this section.

As proposed, the MRL would be the lowest analyte concentration that meets Data Quality Objectives (DQOs) as presented in § 141.40(a)(5) of today's proposed rule, and represents the lowest concentration for which future recovery is predicted to fall, with high confidence (99 percent), between 50 percent and 150 percent. MRLs would be applicable to all laboratories that perform the analysis of drinking water samples as part of UCMR 2. All UCMR 2 laboratories would be required to validate their performance at or below the MRLs before initiating any analyses. This proposal does not require that measurements observed at concentrations below the MRL be reported. In other programs, such reporting may be appropriate. The appropriateness of reporting measurements below the MRL, is generally dependent upon the objectives of a study and is not addressed in this proposed action.

To determine the MRLs listed in today's action, each laboratory that conducted the primary analytical method development, or second or third laboratory studies, determined LCMRLs as detailed in the statistical protocol (USEPA, 2004g). The mean of these LCMRL values was calculated for each analyte. In cases where data from three or more laboratories were available, three times the standard deviation of the LCMRLs was added to the mean of the LCMRLs, to establish the MRL. In cases where data from two laboratories were available, three times the difference of the LCMRLs was added to the mean of the LCMRLs. In statistical theory (Chebyshev's Inequality), three standard deviations around the mean incorporates the vast majority (at least 88.9 percent) of the data points. In the case where there are only two laboratories, the difference serves as a surrogate for the standard deviation due to the uncertainty in the estimate of the standard deviation with only two data points. The MRL for each analyte was determined by then rounding this number to two significant digits.

Note that Method 525.2 was published before the LCMRL protocol was developed. Therefore, no LCMRL data are available for the analytes being determined using this method. The MRLs for acetochlor, alachlor, and metolachlor were determined using the same procedure used in UCMR 1, *i.e.*, multiplication of the highest individual laboratory method detection limit in the method by a factor of 10. Note also that there is a single MRL for perchlorate, although there are four methods approved for UCMR analyses. The value of 0.57 µg/L is a mid-range value (and the MRL determined for Method 332.0) that is easily achievable for Methods 314.1, 331.0, and 332.0; and slightly more difficult to achieve using Method 314.0.

LCMRLs were calculated by selected laboratories during analytical method development. There is no requirement for laboratories that are analyzing samples under the UCMR to determine LCMRLs. The procedure for LCMRL determination includes the following:

- Calibration curve analysis;
- Replicate sample analysis requirements;
- Linear regression procedures; and
- Outlier evaluation.

The validation of laboratory performance at or below the MRL would be required to be performed by all laboratories that analyze samples under UCMR 2. Validation would consist of two procedures:

- As part of the Initial Demonstration of Capability (IDC) for each analytical method, each laboratory would need to process seven replicate samples, spiked at or below the MRL, through the entire method procedure (*i.e.*, including extraction and with all preservatives, where applicable). This step would need to be performed for each analyte. Laboratories would be required to demonstrate that, based on the results of the seven replicates, their predicted range of results will fall, with 99 percent confidence, within 50 percent to 150 percent recovery, inclusive.
- During sample analysis, laboratories would need to run a daily check sample to demonstrate that, at or below the MRL for each analyte, the measured recovery is within 50 percent to 150 percent, inclusive. The results for any analyte for which 50 percent to 150 percent recovery cannot be demonstrated during the daily check would not be valid. Laboratories may elect to re-run the daily performance check sample if the performance for any analyte or analytes cannot be validated. If the performance for these analytes is validated, then the laboratory performance would be considered validated. If not, or as an alternative to analysis of a second check sample, the laboratory may re-calibrate and repeat the performance validation process for all analytes.

Further details regarding these procedures are available through EPA's UCMR Web site (*http://www.epa.gov/safewater/ucmr/ucmr2/index.html*) in a document titled ''UCMR 2 Laboratory Approval Requirements and Information Document'' (USEPA, 2004k).

E. How Will Laboratories Conduct UCMR Analyses?

All laboratories conducting analyses under this regulation must be approved by EPA to perform those analyses. Laboratories seeking approval must provide EPA with data that demonstrates their successful completion of an IDC as outlined in each method, verification of successful performance at the MRLs as specified in today's action, and successful participation in an EPA Proficiency Testing (PT) program for the analytes of interest. On-site audits of selected candidate laboratories may be conducted. Details of the EPA laboratory approval program are contained in the technical manual titled: ''UCMR 2 Laboratory Approval Requirements and Information Document'' (USEPA, 2004k). This document will be available on the electronic docket at: *http://www.epa.gov/edocket/*; or through EPA's UCMR Web site: *http://www.epa.gov/safewater/ucmr/ucmr2/index.html*. In addition, EPA may supply analytical reference standards for selected analytes to participating/approved laboratories.

1. Laboratory Approval Process for UCMR 2

The UCMR 2 laboratory approval program is designed to assess and confirm the capability of laboratories to perform analyses using the methods listed in Table 1 of today's proposed rule, in § 141.40(a)(3). With the exception of EPA Method 525.2, the UCMR 2 methods do not currently have an established certification program. Applicant laboratories that are already approved by their State or primacy entity to conduct drinking water analyses using Method 525.2 will still need to perform the UCMR approval steps, including the related PT evaluation. The UCMR 2 laboratory approval process is designed to assess whether laboratories meet the required equipment, laboratory performance, and

data reporting criteria described in today's action. This evaluation program is voluntary in that it only applies to laboratories intending to analyze UCMR 2 drinking water samples. However, EPA will require systems to use UCMR 2-approved laboratories when conducting monitoring for those analytes listed in Table 1 of § 141.40(a)(3) of this rule. A list of laboratories approved for UCMR 2 will be posted to EPA's UCMR Web site: *http://www.epa.gov/safewater/ucmr/ucmr2/labs.html*. Laboratories are encouraged to apply for UCMR 2 approvals as early as possible, as schedules for large PWS sampling will be completed soon after the final rule is promulgated. The steps for the laboratory approval process are as follows:

a. Request to Participate. The laboratory must contact EPA requesting to participate in the UCMR 2 laboratory approval process. Laboratories must send this request to: UCMR 2 Laboratory Approval Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or e-mail at: *UCMR_Sampling_Coordinator@epa.gov*. EPA will begin accepting requests for registration forms for the methods associated with the UCMR Contaminant List (including List 1, Assessment Monitoring, and List 2, Screening Survey) beginning August 22, 2005. The laboratory must request the necessary registration forms within 90 days after final rule publication.

b. Registration. EPA will send each laboratory that requests registration forms to conduct UCMR 2 analysis a list of information that EPA will need to process that application. This registration information will provide EPA with the basic information about the candidate laboratory: Laboratory name; mailing address; shipping address; contact name; phone number; fax number; e-mail address; and UCMR 2 methods for which the laboratory is seeking approval. Thus, the purpose of the registration step is to ensure that EPA has all of the necessary contact information, and that each laboratory receives a customized application package that will include materials and instructions for the methods that it plans to use.

c. Application Package. When EPA receives the registration information, an application package will be sent to the laboratory for completion. This application package will be customized to address only those EPA methods selected in the laboratory's registration information. EPA may provide analytical standards to be used when conducting monitoring; however, laboratories will be required to procure their own standards, where commercially available, to be used to complete the application process. Information requested in the application will include:

- IDC data, including precision, accuracy, and MRL studies;
- Information regarding analytical equipment;
- Proof of current drinking water laboratory certification; and
- Example chromatograms for each method under review.

The laboratory must also confirm that it will post UCMR 2 monitoring results (on behalf of its PWS clients) to EPA's UCMR electronic data reporting system.

d. EPA Review of Application Package. EPA will review the application package and, if necessary, request follow-up information. Satisfactory completion of this portion of the process will allow the laboratory to participate in the UCMR 2 PT program.

e. Proficiency Testing. A PT sample is a synthetic sample containing a concentration of an analyte that is known to EPA, but unknown to the laboratory being tested. To complete the initial laboratory approval process, a laboratory must successfully analyze UCMR 2 PT sample(s) for each method for which the laboratory is seeking approval. EPA intends to offer up to four opportunities for a laboratory to successfully analyze the UCMR 2 PT samples. Up to three of these studies will be conducted prior to the publication of the final rule, but at least one study will be conducted after publication of the final rule. When a laboratory passes a PT for one of the UCMR 2 methods, EPA will not send a PT sample for that method in later PT opportunities. Laboratories applying for UCMR 2 approval, and laboratories conducting UCMR 2 analyses, may be subject to on-site laboratory audits. No PT studies will be conducted after the start of monitoring. No laboratories will be approved that did not successfully complete a PT study.

f. Written EPA Approval. After the first five steps (a. through e.) have been successfully completed, EPA will send the laboratory a letter listing the methods for which approval is pending (if the PT study and laboratory evaluation is conducted prior to promulgation of the final rule) or approval is granted (after promulgation of the final rule). Laboratories receiving a pending approval may be automatically approved following promulgation of the final rule, or they may need to repeat all or part of the approval process, contingent upon what changes are applied to the rule between proposal of the draft rule and promulgation of the final rule. These letters will also include a reminder that the laboratory may be subject to on-site audits.

2. Quality Control Requirements

For UCMR 2, EPA has made several changes to the quality control requirements, which were previously located in § 141.40, Appendix A. The quality control steps in Appendix A information will be moved to § 141.40(a)(5). Requirements related to MRLs and to laboratory approvals will be incorporated into this section of the proposed rule, and are discussed in sections III.D and III.E.1, respectively. Changes related to the quality control requirements include:

- The language regarding Detection Limits will be replaced with the requirement to validate each laboratory's performance at or below the MRL. Since UCMR 1 was promulgated, EPA has developed new MRL and LCMRL procedures. The MRL procedures are now described in § 141.40(a)(5). Guidelines and procedures for using LCMRLs in establishing MRLs for UCMR 2 are described in this preamble, and in a document entitled: ''Statistical Protocol for the Determination of the Single-Laboratory Lowest Concentration Minimum Reporting Level (LCMRL) and Validation of the Minimum Reporting Level (MRL)'' (USEPA, 2004j).
- The calibration step will be changed to remove the requirement for acceptance ranges for each analytical method. Because all of the methods approved for UCMR 2 monitoring specify calibration acceptance criteria, it is not necessary to specify criteria in this rule.
- The requirement to analyze a field reagent blank (Reagent Blank Analysis) will be removed because the analysis of a field reagent blank is not required in any of the methods proposed for UCMR 2. None of the analytes being proposed are sufficiently hydrophobic or volatile enough for there to be a serious concern about sample contamination during shipping.
- The requirement to analyze Quality Control Samples will be removed since they are not available for the majority of the analytes contained in this rule.
- The terms Matrix Spike and Matrix Spike Duplicate will be replaced with Laboratory Fortified Sample Matrix and Laboratory Fortified Sample Matrix Duplicate, respectively, to be consistent with the terms specified in the data

elements table in § 141.35(e) of today's proposed action.

- The language to describe Internal Standard Calibration will be modified to more clearly describe the requirements.
- The requirements regarding the Method Performance Test will not be changed.
- The requirements related to Detection Confirmation will be revised to be consistent with the methods being approved in this rule. Analytical results for perchlorate determined to be at or above the MRL using Methods 314.0 and 314.1 are required to be confirmed by a second chromatographic column, or by confirmation using Method 331.0 or 332.0, before being reported. Alternatively, the primary analysis of perchlorate may be conducted using either Method 331.0 or 332.0.
- Reporting requirements will be clarified and modified such that laboratories will be required to report their data to EPA's electronic data reporting system (*http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html*) within 120 days of sample collection. PWSs have 60 days from the laboratory posting to review, approve, and submit the data to the State and EPA via the electronic reporting system. After 60 days from the laboratory's posting, if the PWS has not approved and submitted the data, the data will be considered approved and final for EPA review.

No changes will be made to the requirements related to Sample Collection and Preservation other than the addition of the requirement for laboratories using Method 314.0 for the analysis of perchlorate to preserve their samples as required in the other approved perchlorate analysis methods. In addition, the requirements concerning Method Defined Quality Control will not be changed.

F. How Are Systems Selected for UCMR Monitoring?

1. How Are Systems Selected for Assessment Monitoring?

a. Original Assessment Monitoring Statistical Approach for UCMR 1. Under UCMR 1, Assessment Monitoring was specified to be conducted by all large CWSs and NTNCWSs serving more than 10,000 people (*e.g.*, a census of large systems, totaling approximately 3,100), and by a statistically representative sample of 800 small systems (systems serving 10,000 or fewer people). The large size of the stratified random sample allowed for a high level of confidence in the resulting monitoring data and low error or uncertainty within the sample. The List 1 contaminants monitored under Assessment Monitoring are the priority contaminants for which analytical methods have already been developed.

EPA identified DQOs for the representative sample of small systems to include the following: data must provide unbiased national exposure estimates; and margins of error must be kept to ±1 percent with 99 percent confidence for CWSs and ±2.5 percent with 95 percent confidence for NTNCWSs. Use of a standard statistical design formula to estimate the minimum sample size and an assumed estimated occurrence of approximately 1 percent resulted in a minimum sample size of 659 systems. The sample size was then adjusted upwards to account for additional DQOs. Furthermore, the sample was stratified across system size, water source, and type to account for differences in vulnerability, differential occurrence, and management capacity, as outlined below.

The small system representative sample was designed to account for different system sizes, types of systems, sources of water supply, contaminants likely to be found, and geographic location (*e.g.*, States), as outlined in SDWA section 1445(a)(2)(A). The sample was stratified considering the proportion of the population served by CWSs and NTNCWSs by water source type (*i.e.*, ground or surface water) and system size category (*i.e.*, serves 25 to 500 people, 501 to 3,300 people, and 3,301 to 10,000 people) within the water source type. This stratification allowed EPA to account for different exposure risks of contaminant occurrence that may be related to the differential vulnerability of water sources and differing management and financial capacity that can vary across system types and sizes.

EPA also allocated the selection of small systems across all the States and territories to account for differences in spatial vulnerability and contaminant occurrence and made adjustments to ensure equity in participation. Because contaminant exposure assessment was a primary goal of UCMR 1, EPA began with a base design that allocated systems to States in proportion to the population served. This population-weighted allocation leads to the best estimates of national exposure. However, this approach, when strictly applied, assigns small numbers of systems, or even zero systems, to the smallest States and territories. To ensure the sample was fully representative of the nation and to provide equity across States for involvement in the UCMR, EPA adjusted the population-based design to include at least two systems from each State and territory in the United States (with the exception of Guam, which had only one PWS that qualified). Small Tribal water systems in each of the 10 EPA Regions were grouped into a single category for the representative sample. Thus, the Tribal category was equivalent to a ''State'' for the statistical selection process, which ensured that Tribal systems would be selected. Exhibit 7 summarizes the system allocation across system sizes and water sources, including the adjustment for a minimum of two systems per State.

EXHIBIT 7.—APPROXIMATE SAMPLE ALLOCATION FOR ASSESSMENT MONITORING: EXPECTED NUMBER OF SYSTEMS SELECTED BY SYSTEM SIZE AND WATER SOURCE [1]

Size category	Ground water systems	Surface water (and GWUDI) systems [2]	Total
500 and Under	103	57	160
501 to 3,300	250	50	300
3,301 to 10,000	230	110	340
Total	583	217	800

[1] For more information see ''Statistical Design and Sample Selection for UCMR 1'' (USEPA, 2001c).
[2] GWUDI = ground water under the influence of surface water.

To provide an improved understanding of contaminants and conditions affecting small systems in UCMR 1, EPA selected 30 small PWSs from the systems in State Monitoring Plans as ''Index Systems'' at which contaminants would be monitored every year during the five-year cycle. EPA conducted the sampling and testing for the Index Systems. At the time of sampling, EPA also gathered other data to characterize the environmental setting affecting the system including precipitation, land and water resource use, and environmental data (such as soil type and geology).

The details of the design are included in ''Statistical Design and Sample Selection for the UCMR 1'' (USEPA, 2001c). The design of UCMR 1 was subjected to peer review and improved by recommendations of the peer reviewers, as well as from suggestions made during the public comment and response process in developing UCMR 1.

b. *Proposed Assessment Monitoring Statistical Approach for UCMR 2.* EPA proposes to maintain the same basic statistical design for its UCMR 2 national representative sample of 800 small systems and to continue with a census of large water systems for Assessment Monitoring. EPA believes that the combination of a nationally representative sample of small systems and a census of large systems provides a powerful tool for assessing contaminant occurrence in PWSs, and believes that this is the most effective and accurate survey approach, as long as methods, laboratory capacity, and cost issues allow for its implementation.

EPA is proposing to eliminate Index System monitoring at small systems under UCMR 2 based on the lack of contaminant occurrence observed at Index Systems monitored in UCMR 1.

2. How Are Systems Selected for the Screening Survey?

a. *Original Screening Survey Statistical Approach for UCMR 1.* The Screening Survey tier of UCMR 1 was designed as a statistical sample to assess contaminant occurrence in PWSs. However, because of the small number of systems, the resulting data were only designed to be used for national estimates. Individual strata had too large a variance to provide meaningful estimates. The Screening Survey, List 2 contaminants were those for which uncommon analytical methods were used. To ensure there was enough laboratory capacity to conduct these new, specialized analyses, the Screening Survey sample size was limited to 300 systems (120 large and 180 small PWSs). Screening Survey results from UCMR 1 were generally expected to provide only enough information for EPA to determine whether a contaminant should be elevated to future Assessment Monitoring because at low occurrence there would be considerable uncertainty. Only at a relatively high level of occurrence could a contaminant be moved directly to regulatory determination using the UCMR 1 Screening Survey data.

The Screening Survey sample of systems was randomly selected from the Assessment Monitoring sample pool to allow systems some efficiency in conducting sampling for both tiers of monitoring. Screening Surveys and Assessment Monitoring were scheduled to coincide for those small system systems selected for both. By design, large Screening Survey systems were selected from the pool of all large systems, as all were required to conduct Assessment Monitoring. However, there were difficulties with the sample selection for small systems because the sample pool was small. During either of the two UCMR 1 Screening Survey years, the sample pool was restricted to one-third of the Assessment Monitoring systems (approximately 267). Thus, the Screening Survey sample of 180 small systems represented approximately 67 percent of the available sample pool in a given year.

In general, the smaller sample size of the Screening Surveys is associated with higher margins of error and lower confidence in estimating contaminant occurrence (compared to the larger Assessment Monitoring sample). Although the sample as a whole can provide nationally representative estimates, sample results cannot be subdivided to be representative of individual strata, as they can be with the larger Assessment Monitoring sample. In addition, uncertainty is high for low occurrence contaminants. The samples for each Screening Survey under UCMR 1 were allocated across five system size categories, as well as across ground water and surface water (and ground water under the direct influence of surface water (GWUDI)) systems, to provide coverage of differences in vulnerability that may exist. See Exhibit 8 for the sample allocation across system size and source water categories. Each size category was given equal importance with 60 systems selected from each size category, and with the selected systems distributed evenly between surface water and ground water systems wherever possible (*i.e.*, 30 ground water and 30 surface water systems were targeted to be selected to monitor for each Screening Survey). However, when there were not enough systems in a given size/source category, systems were allocated to the other source within that same size category. This was the case for small systems because of the restricted sample pool. This resulted in a uniform sample allocation across all size categories, with 180 small systems and 120 large systems in each of the two Screening Surveys. This distribution was used to provide a balance between population served and the number of systems. A sampling scheme weighted by population cannot include many small and very small systems; a scheme weighted by the number of systems served can include too many small systems at the expense of large systems (USEPA, 2001c).

EXHIBIT 8.—UCMR 1 DESIGN ALLOCATION OF SYSTEMS FOR SCREENING SURVEYS, BY SIZE CATEGORY

Size category	Ground water systems [1]	Surface water (and GWUDI) systems [2]	Total
Sample of Small Systems (serving 10,000 or fewer people)			
500 and Under	30	30	60
501 to 3,300	30	30	60
3,301 to 10,000	30	30	60
Subtotal Small Systems	90	90	180
Large Systems (serving more than 10,000 people)			
10,001 to 50,000	30	30	60
50,001 and over	30	30	60

EXHIBIT 8.—UCMR 1 DESIGN ALLOCATION OF SYSTEMS FOR SCREENING SURVEYS, BY SIZE CATEGORY—Continued

Size category	Ground water systems [1]	Surface water (and GWUDI) systems [2]	Total
Subtotal Large Systems	60	60	120
Total	150	150	300

[1] Includes systems with all of their water supplied by a ground water source.
[2] Includes systems with all or part of their source water supplied by surface water or GWUDI.

b. Proposed Screening Survey Statistical Approach for UCMR 2. To increase the statistical strength of the Screening Survey sample, EPA proposes to include additional PWSs in the Screening Survey under UCMR 2. The sample size will be increased in two ways to ensure the data can be used to support regulatory determinations and rule development, if warranted. Thus, if a contaminant of concern is found to occur with some significance during the Screening Survey, EPA may choose not to conduct Assessment Monitoring and move to make a regulatory determination based on these data to protect public health more quickly.

The proposed new Screening Survey design also accounts for possible laboratory capacity issues related to the use of uncommon methods. The Screening Survey will be conducted across two years, rather than the one-year implementation period that was established under UCMR 1. Spreading the monitoring across two years will reduce the burden on the limited number of laboratories that will be capable of using these uncommon methods. In today's proposed rule, only one Screening Survey list is included, as compared to UCMR 1, in which separate Screening Survey lists were issued for chemical and microbial monitoring. As shown in the UCMR 2 time line in section III.K, Exhibit 10, EPA has left open the possibility of a second Screening Survey later in the UCMR 2 monitoring cycle, if necessary.

The proposed design increases confidence in the sampling results in two ways. First, the Screening Survey would use a larger stratified random sample of approximately 800 systems (compared to 300 under UCMR 1), allocated across five strata for systems serving 100,000 or fewer people. The sample size is derived from the same rationale as that for Assessment Monitoring, but the sample frame is expanded to include large systems serving between 10,001 and 100,000 people. Second, the Screening Survey will include a census of the largest PWSs, those serving more than 100,000 people (322 systems), referred to within this section as ''very large'' systems. Using a census of these very large systems will minimize the possibility of missing contaminant occurrence at the systems that serve the largest portion of the population, while keeping the number of systems required to conduct the Screening Survey relatively small. No small systems (those serving 10,000 or fewer people) will be selected to participate in more than one component of UCMR 2 (*i.e.*, will monitor for only Assessment Monitoring or the Screening Survey).

The sample of 800 systems serving 100,000 or fewer people will be divided uniformly among 10 strata (as used in past Screening Surveys under UCMR 1; see Exhibit 8). With the census of the systems serving 100,001 people or more (approximately 322), plus the sample of 800 systems, 1,122 water systems will monitor for the Screening Survey under UCMR 2.

EXHIBIT 9.—ALLOCATION OF SYSTEMS FOR SCREENING SURVEY, LIST 2 CONTAMINANTS

Size category	Ground water systems [1]	Surface water	Total systems (including GWUDI) [2]
Sample of Small Systems (serving 10,000 or fewer people)			
50 and under	80	80	160
501 to 3,300	80	80	160
3,301 to 10,000	80	80	160
Subtotal Small Systems Sample	240	240	480
Sample of Large Systems (serving 10,001 to 100,000 people)			
10,001 to 50,000	80	80	160
50,001 to 100,000	80	80	160
Subtotal Large Systems Sample	160	160	320
Subtotal of Small and Large Systems Sample	400	400	800
Census of Very Large Systems (serving greater than 100,000 people)			
100,001 and over	61	261	322
Grand Total	461	661	1,122

[1] Includes systems with all of their water supplied by a ground water source.
[2] Includes systems with all or part of their source water supplied by surface water or GWUDI.

3. What Is UCMR Pre-Screen Testing?

The third tier of UCMR 1, Pre-Screen Testing, was envisioned for use with methods that were in the early stages of development, and/or methods that were very specialized or limited in applicability. It was to be conducted by up to 200 PWSs that would be identified by State agencies as vulnerable to the List 3 contaminants. This testing would be a targeted sampling to assess occurrence in the most vulnerable settings, and could help to guide the next steps for contaminant evaluation as well as methods development. Although no Pre-Screen Testing has been scheduled to date, nor has any been proposed in this action, the Pre-Screen Testing design could still be a useful way to monitor for emerging contaminants with highly technical, specialized methods. Therefore, the rule retains the language related to Pre-Screen Testing that was part of the original rule.

4. What Are the Other Applicability Considerations?

Applicability criteria for UCMR 2 remain similar to those under UCMR 1. The survey design for the Screening Survey is slightly different than that under UCMR 1, as described in section III.F.2. Specific UCMR 2 applicability criteria are described in §§ 141.40(a)(1) and (2) of today's proposed action. Notable changes or clarifications to the applicability criteria include the establishment of a clear date for rule applicability; a requirement to notify EPA in the case of changes to applicability; and clarification regarding the definition of system population, as follows:

a. *New Applicability Date.* The applicability requirements for PWSs under UCMR 1 provided distinct criteria (*e.g.*, system size, water source, etc.) which helped determine whether a system could be subject to UCMR monitoring requirements. However, a specific date was not prescribed in the UCMR 1 regulation to establish a cutoff date by which systems did or did not fit these criteria. This created uncertainty defining applicability over the course of the three-year monitoring period (2001–2003). EPA is proposing in § 141.40(a) to establish the UCMR 2 applicability criterion that includes a specific applicability date of June 30, 2005, at which point a defined list of PWSs will be established as subject to the rule requirements.

b. *Notice Regarding Changes to Applicability Required.* The proposed rule also includes an allowance for adjustments to a system's applicability status through reporting requirements in § 141.35(b)(2). During the course of UCMR 2 implementation, if a change occurs at a system that affects UCMR applicability or specific monitoring requirements (such as a change of source water, or closure of a sampling location), the system can send a letter to EPA explaining the changes and requesting appropriate changes to its monitoring requirements. However, to ensure that a system does not mistakenly discontinue monitoring, today's proposed action specifies that the system must continue to monitor according to established requirements until it receives written approval from EPA to change its requirements. EPA will address these requests on a case-by-case basis.

c. *Definition of System Population.* Under UCMR 1, large PWSs were defined as those systems that served a population of more than 10,000 individuals and small PWSs were those that served 10,000 or fewer people. While this included the sum of the population served by the combined distribution system this requirement was occasionally misunderstood. In today's proposed action EPA has explained more clearly that ''population served'' is the sum of the retail population served directly by the PWS plus the population served by any consecutive system(s) receiving all or part of its finished water from that PWS. As was established in the proposed Stage 2 Disinfectants and Disinfection Byproducts Rule (68 FR 49547, August 18, 2003 (USEPA, 2003b)) EPA defines a ''consecutive system'' as a public water system that buys or otherwise receives some or all of its finished water from one or more wholesale systems.

G. When Must Monitoring Be Conducted?

1. Timing of Monitoring

The timing of monitoring is a critical aspect of UCMR implementation. Similar to UCMR 1, the UCMR 2 program will have two components: Assessment Monitoring for List 1 contaminants, to be conducted July 2007–June 2010; and the Screening Survey for List 2 contaminants, to be conducted July 2007–June 2009.

For each component of UCMR 2, participating systems will collect samples as follows:

- Surface water sampling locations (including all sampling locations for which some or all of the water comes from a surface water or GWUDI source) will be sampled four times, three months apart, during a continuous 12-month period. These locations must be sampled in either the first, second, or third month of four consecutive quarters. Therefore, a system could conduct monitoring in either: (1) January, April, July, October; (2) February, May, August, November; or (3) March, June, September, December.
- Ground water sampling locations (including only those sampling locations at which all of the water comes from a ground water source) will be sampled two times, for six months apart, during a continuous 12-month period.

The specific days of the week for sample collection and shipping are limited to ensure sample quality. Under both UCMR 1 and today's proposed UCMR 2, systems cannot collect samples on Friday, Saturday, or Sunday. The reason stated within the UCMR 1 language was that samples needed to be shipped and received at the laboratory within 30 hours of sampling to accommodate requirements for the sampling of microbiological parameters, as well as to assure that the samples were received within the required temperature range. A 30-hour turn-around time is sometimes not possible to achieve and there are no microbiological parameters included in this action. Therefore today's action proposes to replace the 30-hour turn-around time with the requirement that samples be shipped and received at the laboratory at the required temperature to maintain sample quality.

2. Individual PWS Monitoring Schedules

Based on lessons learned during UCMR 1 implementation, EPA intends to establish schedules for large system monitoring to ensure adequate laboratory capacity for the analysis of UCMR contaminants, and to improve the oversight of monitoring and data reporting. Under UCMR 1, EPA specified the year and months in which small systems would monitor, for both Assessment Monitoring and the Screening Surveys, to ensure coverage related to spatial and temporal monitoring, and to enable scheduling of laboratory analyses and shipping of sampling materials (all of which EPA paid for). However, schedules for large systems only specified a particular year for Screening Surveys. For Assessment Monitoring, large systems could select their year and months of monitoring, within a three-year window. Large systems were not required to notify EPA of their Assessment Monitoring schedule, and many opted to conduct monitoring during the last possible year, which created some implementation problems. EPA was not able to project

the numbers of PWSs or identify the individual PWSs that had failed to comply with the UCMR 1 requirements until well into the final monitoring year, making compliance assistance more difficult. Greater scheduling flexibility was believed justified for UCMR 1 because the majority of the approved UCMR 1 analytical methods were also approved for established compliance monitoring. This flexibility allowed for possible cost savings on laboratory fees and sample collection burden. In contrast, UCMR 2 methods are not appropriate for compliance monitoring (with the exception of Method 525.2, which has been added to allow for the monitoring of both the acetanilide degradates, and the parent compounds).

EPA will use the State Monitoring Plans [4] to identify all small and large systems that will participate in the UCMR program, and to identify the monitoring schedule for each system. More specifically, EPA will send each State an initial State Monitoring Plan that lists all small and large systems that are subject to the UCMR requirements, and an initial schedule for sampling (year and months) for each system. In the initial State Monitoring Plans for each State, approximately one-third of the PWSs will be scheduled to conduct Assessment Monitoring in each continuous 12-month period during July 2007 through June 2010 and approximately one-half of the PWSs will be scheduled to conduct the Screening Survey in each continuous 12-month period during July 2007 through June 2009. States that enter into Partnership Agreements (PAs) with EPA will have the option to review and revise PWS monitoring schedules as part of their modifications to the State Monitoring Plans.

EPA will incorporate State revisions to the final State Monitoring Plans, including the sampling schedule revisions, if system participation is allocated approximately evenly across the years of monitoring. PWSs will be notified of their schedules by either EPA or the State, as determined through PAs (see section III.I of today's action for discussion of PAs). Large PWSs that meet the UCMR 2 applicability criteria will be required to conduct UCMR 2 Assessment Monitoring, regardless of whether they are notified of a sampling schedule by EPA or the State.

Large systems will have 210 days from the publication of the final rule to revise their schedule using the EPA electronic data reporting system. Following this 210-day period, if a large PWS cannot sample according to the required schedule (e.g., if a sampling location is closed for more than 15 days before and after the scheduled monitoring), the PWS must send a letter to EPA explaining the reason samples cannot be taken according to the assigned schedule, and requesting an alternative schedule, either: (1) To UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or (2) by e-mail at *UCMR_Sampling_Coordinator@epa.gov.*

H. Where Are Samples Collected?

For UCMR 2 monitoring, EPA proposes that all Assessment Monitoring sampling locations be entry points to the distribution system (EPTDSs). Under UCMR 1, ''raw source water'' sampling was allowed (if required by the State for compliance monitoring of regulated contaminants). However, if a system monitoring its source water detected any contaminants above the MRL concentration during UCMR 1 (and treatment was subsequently applied), the system was required to initiate monitoring at EPTDSs. EPA proposes to eliminate the option of source water monitoring under UCMR 2 (except for source water that leaves the EPTDS untreated) because:

- This created confusion and errant reporting for systems during UCMR 1; and
- The methods being proposed for UCMR 2 are generally not applicable to regulated contaminant monitoring, with the exception of Method 525.2; thus, UCMR 2 samples cannot be used to meet regulatory requirements, and no savings can be realized through use of multi-analyte methods that coincide with those for regulated contaminants.

EPA is proposing that the List 2 Screening Survey sampling locations be a combination of EPTDSs and distribution system sampling points. Monitoring for all the List 2 contaminants would be conducted at EPTDS sampling points. In addition to the EPTDS sampling location, monitoring for the nitrosamines would also be conducted at a sampling point location in the distribution system in order to capture the occurrence of NDMA as a disinfection byproduct (DBP). Both free chlorine and chloramines have been shown to form NDMA, but the rate of formation is slow, making it likely that NDMA concentrations will increase in the distribution system (Mitch and Sedlak, 2002). Thus, EPA is proposing that systems use their Stage 1 Disinfection Byproduct Rule (DBPR) maximum residence time sampling locations for the collection of distribution system samples for nitrosamine analyses. Systems with multiple treatment plants or sources of disinfected water will have a distribution system maximum residence time (DSMRT) sampling point associated with each plant/water source as defined in the Stage 1 DBPR (§ 141.132(b)(1)(i)). However, for some of the water systems that are required to conduct Screening Survey monitoring, the DSMRT sampling location may not be previously defined. Water systems that do not apply a chemical disinfectant, and wholesalers who do not have retail customers may not have defined DSMRT sampling points in the distribution system. For those cases, EPA is proposing that the nitrosamine samples be collected only at EPTDSs. EPA is requesting comment on whether or not nitrosamine samples should be collected at both the DSMRT sampling location and the EPTDS location or only at the DSMRT sampling location.

EPA is also proposing language to allow large systems that use ground water sources and have multiple EPTDSs to conduct monitoring at representative entry point(s) rather than at each EPTDS. Many systems with multiple ground water EPTDSs suggested to EPA during UCMR 1 that these wells are often representative of the same source of ground water (e.g., because they come from the same aquifer in the same well field). To monitor at representative EPTDSs, systems must meet the criteria specified in § 141.35(c)(3), and receive approval from EPA or the State (refer to section III.J.1 for a discussion of the criteria and necessary documentation).

I. What Is the States' Role in the UCMR Program?

Under UCMR 2, EPA is clarifying States' potential role in rule implementation. EPA will narrow the optional activities under Partnership Agreements (PAs), formerly referred to as ''Memoranda of Agreement,'' so that implementation responsibilities will be clearer. Under UCMR 1, EPA included regulatory language that described some implementation and oversight activities that States could agree to through the PA process. However, because the UCMR is a direct implementation rule, State participation is voluntary. Specific activities for individual States are

[4] Under UCMR 1, initial State Monitoring Plans included tabular listings of the small systems selected to conduct Assessment Monitoring and listings of all systems (small and large) selected to conduct Screening Survey monitoring. Initial State Monitoring Plans also included instructions to States for revising and/or correcting their State Monitoring Plans, including modifications to sampling schedules for small systems. EPA incorporated revisions from States and returned the final State Monitoring Plans to each State.

identified and established through the PAs, not through rule language. Thus to streamline the language for UCMR 2, EPA has deleted this non-rule language. EPA has retained the language related to the Governors' petition process (see § 141.40(b)(1)), and the State-wide waiver provision (see § 141.40(b)(2)).

One new responsibility under the PAs that States may choose to accept will be the review and approval of proposals for representative EPTDSs that are submitted by ground water systems. In addition, EPA will expand the State Monitoring Plans to include all PWSs that are subject to UCMR (as compared to UCMR 1 State Monitoring Plans, which included just those selected for the statistical samples). These changes are described further below.

1. State Participation in Partnership Agreements (PAs)

The statute provides a role for States in developing a representative monitoring plan for small systems (SDWA section 1445(a)(2)(C)(i)). In addition, States/Primacy agencies most often have the best information about PWSs in their State. Through PAs, States can help EPA implement the UCMR program and help ensure that the UCMR data used for future regulatory determinations will be of the highest quality possible. During UCMR 1 implementation, State assistance with implementation was critical to the success of the program and was greatly appreciated by the Agency. EPA would like to continue to build upon these partnerships by soliciting participation from the States through the PA vehicle for UCMR 2. However, under UCMR 2, EPA plans to simplify the PAs. The UCMR 1 PA was complex, with 43 assistance tasks that States could perform or defer to EPA to act on.

2. Activities To Be Included in the UCMR 2 PAs

The PA activity list under UCMR 2 is substantially shorter than that under UCMR 1 and will include a list of key activities for partnering States to perform, as discussed in this section. All States that agree to partner with EPA will be asked to review and provide any needed revisions to the State Monitoring Plan. Each State may agree to accept additional responsibilities as documented through each State's final PA with EPA. The primary potential State activities are discussed in sections a through c below. In addition, States that have assumed full partnership responsibilities may assist systems with their monitoring and reporting requirements, though the systems are ultimately responsible for compliance with their UCMR requirements.

a. *Review and Revision of the Initial State Monitoring Plan.* EPA will send each State an initial State Monitoring Plan that will identify the statistically selected systems for Assessment Monitoring and Screening Survey monitoring, and all other large systems that are subject to UCMR 2 requirements and applicability criteria (see discussion of UCMR 2 system selection in section III.F of today's action). For the statistically selected systems, EPA will provide a list of similar replacement systems from which States can select to replace systems that may not have been appropriately specified in the initial plan. If the State agrees to partner with EPA, the State will be asked to notify EPA that it either accepts the State Monitoring Plan as is, or provide a written request with proposed modifications to the plan. Specific timing of the State Monitoring Plan coordination will be addressed in the PAs. State modifications can include any or all of the following allowed changes:

- *Replace or update information on systems.* A State can modify its State Monitoring Plan by removing systems that have closed, merged, or are purchasing all of their water from another system. If a State believes there are other reasons for removal from the initial plan, it will be asked to identify those systems, and provide an explanation for removal, in the request to modify the initial plan. If a State believes there are large systems (those serving more than 10,000 people) within their State that have not been included on the list of Assessment Monitoring systems, the State will be asked to identify those systems, and provide an explanation for their inclusion in the request to modify the initial plan. Information about the actual or potential occurrence or non-occurrence of contaminants at a system, or a system's vulnerability to contamination cannot be used as a basis for removal from or addition to the plan. For the set of statistically selected systems, a State will be asked to replace any system it removes with systems from the replacement list, selecting replacements in the order they are listed.
- *Modify the timing of monitoring for systems.* A State may also modify the plan by recommending changes to the timing of monitoring for any system by selecting an alternative schedule (year and months) within the years specified for Assessment Monitoring or the Screening Survey. One reason a State may chose to modify the timing for system sampling could be to coordinate monitoring with regulated contaminant compliance monitoring. As long as system participation is allocated approximately evenly across the years of monitoring, the schedule can be modified for any system in the initial plan.

b. *Review and Approval of PWS Proposed Representative EPTDS.* As discussed in section III.H, some large systems that use ground water as a source and have multiple EPTDSs may propose monitoring at representative entry point(s) rather than at each EPTDS. Large PWSs that have State-approved alternate EPTDS sampling locations, as provided for under §§ 141.23(a)(1), 141.24(f)(1), and 141.24(h)(1), may submit a copy of documentation from their State that approves their alternative sampling plan for EPTDSs. PWSs that do not have an approved alternative EPTDS sampling plan may submit a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS if: They use ground water as a source; all of their well sources have either the same treatment or no treatment; and they have an EPTDS for each well within a well field (resulting in multiple EPTDSs from the same source, such as an aquifer). The existing approval documentation from the State or the representative well proposal, as appropriate, must be submitted to the UCMR Sampling Coordinator within 120 days after publication of the final UCMR 2 regulation. EPA or the State will review the proposal, coordinate any necessary changes with the system, and approve the final list of EPTDSs where the system will be required to monitor. No plan will be final until the system receives written approval from EPA or the State.

c. *Notification and Instructions for Systems.* If a State agrees to notify their systems, then within 30 days of receiving their final State Monitoring Plan, the State will be asked to notify all systems in that final plan of their monitoring and reporting requirements under UCMR, including sampling schedules. In addition, for each small system in the plan (i.e., those serving 10,000 or fewer people), the State will be asked to provide instructions on location, frequency, timing of sampling, use of sampling equipment, and handling and shipment of samples based on these regulations. EPA will provide States with guidance and templates for these small system instructions. States that perform the sampling or change the arrangements for the monitoring at the small systems in the plan will be asked to address these alternative monitoring arrangements in their PAs.

As part of the agreement to conduct system notification, partnering States will be asked to provide an electronic listing of all PWSs that have been notified within 30 days of that notification. The list should be e-mailed

in flat file or standard spreadsheet format (such as Microsoft® Excel) to: *UCMR_Sampling_Coordinator@epa.gov,* and should include the PWS identification (PWSID) code and the date notification was sent to each system. A representative sample of the notice letter should also be included.

3. What If States Do Not Participate in a PA?

Although EPA encourages each State to participate in a PA, States can choose not to enter into this agreement with EPA. In this event, the initial State Monitoring Plan that EPA sends the State will become the final State Monitoring Plan for that State and EPA will manage all UCMR-related activities, coordinating directly with affected PWSs in that State.

J. What Are the Data Reporting Requirements?

Under the current unregulated contaminant monitoring program, reporting requirements exist at § 141.35. Today's proposed action modifies those requirements to make reported results most useful for sound scientific analyses of the occurrence of unregulated contaminants. The proposed UCMR program identifies 15 data elements in § 141.35(e), Table 1, that must be reported with unregulated contaminant sample test results. Large systems conducting Assessment Monitoring must include data elements 1 through 5, and 7 through 15 with each sample result. Large systems conducting Screening Survey must include elements 1 through 15 with each result. Small systems must record key data elements on each sample form and bottle. Small systems conducting Assessment Monitoring must include elements 1 through 5, and 7; and those conducting Screening Survey must include elements 1 through 7. With today's proposed changes to Table 1 in § 141.35(e), some of the reporting requirements will remain the same, a few are clarified, some have been removed, and three new additional data elements are being proposed. A minor change that has been applied to many of the data elements is a change in nomenclature from ''identification numbers'' to ''identification codes'' to allow for the instances when alphanumeric identifiers are necessary.

Other additions and clarifications to § 141.35 are proposed for reporting that is required prior to and during monitoring. The purpose of these changes is to establish clear, enforceable locations and time frames for each system's UCMR monitoring, and to ensure that other critical rule-related information is communicated to EPA, such as changes to a system's applicability under the rule.

Requirements in today's proposed action that are intended to ensure communication regarding rule applicability and compliance include reporting of changes in system status or other factors that affect a system's requirements under the rule (such as if a system believes it does not meet the applicability criteria for UCMR); reporting to EPA if a system believes it is subject to UCMR requirements, yet has not been notified by either EPA or the State regarding requirements; and reporting to EPA if a system cannot sample according to its assigned schedule (*e.g.*, budget constraints, unavailability of sampling location during scheduled month of monitoring).

Requirements and restrictions in today's proposed action related to reporting of monitoring data are as follows: Systems cannot report previously collected sampling data (because compliance with UCMR 2 requires the use of uncommon analytical methods, most of which have been developed specifically for UCMR 2 contaminants); and systems reporting more than one set of results for the same sampling location and event will have the highest of the reported values as the official result.

EPA is proposing through today's action that large systems report contact information, sampling location inventory information, and monitoring results to EPA's electronic data reporting system: *http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html*. Today's proposed action also specifies that communications requiring written explanations or copies of documentation be sent either: (1) To UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or (2) by e-mail at *UCMR_Sampling_Coordinator@epa.gov*. This information may be entered by the PWS, their State, laboratory, or other representative of the PWS; however, the PWSs is ultimately responsible for compliance with this requirement.

1. What Information Is Required Prior To Monitoring?

a. *Contact Information.* As with UCMR 1, large systems are required to report contact information to EPA. Today's proposed action clarifies that this information must be sent within 90 days of final rule publication, and specifies that the information must be submitted to EPA's electronic data reporting system. Today's proposed action also specifies that for small systems, EPA will send a letter requesting specific contact information. Those small systems, or the partnered State, must fill in the required information and return it within 90 days of receiving the request.

b. *Sampling Location and Inventory Information.* EPA is proposing that large PWSs provide inventory information for each applicable sampling location. This information must be reported through EPA's electronic reporting system within 210 days of final rule publication. For each sampling location, or for each approved representative sampling location (see the following section, III.J.1.c for information about representative sampling locations), large PWSs must submit the following information: PWSID code; PWS facility identification code; sampling point identification code; sampling point type identification code; and sampling location water type.

In addition, large systems that are required to conduct Screening Survey monitoring must also report the disinfectant(s) used to maintain a residual in the distribution system for each distribution system sampling location (see section III.J.3.a for discussion of these reporting elements). All systems serving more than 10,000 people must ensure that the information concerning the disinfectants used, are submitted along with the sample results.

c. *Proposals for Ground Water Representative Sampling Locations.* Some large systems that use ground water as a source and have multiple EPTDSs may propose monitoring at representative entry point(s) rather than at each EPTDS. Large PWSs that have State-approved alternate EPTDS sampling locations, as provided for under §§ 141.23(a)(1), 141.24(f)(1), and 141.24(h)(1), may submit a copy of documentation from their State that approves their alternative sampling plan for EPTDSs. PWSs that do not have an approved alternative EPTDS sampling plan may submit a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS if: They use ground water as a source; all of their well sources have either the same treatment or no treatment; and they have an EPTDS for each well within a well field (resulting in multiple EPTDSs from the same source, such as an aquifer). The existing approval documentation from the State or the representative well proposal, as appropriate, must be submitted to the UCMR Sampling Coordinator within 120 days after publication of the final UCMR 2 regulation. EPA or the State will review the proposal, coordinate any

necessary changes with the system, and approve the final list of EPTDSs where the system will be required to monitor. No plan will be final until the system receives written approval from EPA or the State.

The proposal must demonstrate that any EPTDS selected as representative of the ground water supplied from multiple wells is associated with an individual well that draws from the same aquifer as the multiple wells (*i.e.*, those being represented). For each representative sampling location in the proposal, systems must include the following information: PWSID, facility identification code, and sampling point identification code. In addition, the proposal must include supporting documentation, which can include system-maintained well logs or construction drawings indicating comparable depths (relative to elevation datum) of screened intervals and details of well casings and grouting; data demonstrating relative homogeneity of water quality constituents (*e.g.*, pH, dissolved oxygen, conductivity, iron, manganese) in samples drawn from each well; and data showing that the wells are located in a limited geographic area (*e.g.*, all wells within a 0.5 mile radius) and/or, if available, the hydrogeologic data indicating time of travel separating the representative well from each of the individual wells it represents (*e.g.*, all wells within a five-year time of travel delineation).

2. When Must Monitoring Results Be Reported?

a. *Large Systems.* Today's proposed action establishes the timing of large system review and approval of monitoring data, as follows: Systems must ensure that their laboratory posts the data in EPA's electronic data reporting system (*http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html*) within 120 days from the sample collection date; systems then have 60 days from when the laboratory posts the data in EPA's electronic data reporting system to review, approve, and submit the data to the State and EPA via the EPA electronic reporting system; if systems do not take action on the data within 60 days of the laboratory's posting to the electronic reporting system, the data will be considered approved by the system, and available for EPA review, prior to public release.

b. *Small Systems.* Because EPA pays for and organizes the small system testing program, the review and approval step for small systems differs. Under today's proposed action, small systems would only be required to record system and sample location information on the sampling forms and bottles that are sent to them by the UCMR Sampling Coordinator. Procedures for submitting this information will be specified in the instructions sent to the system. Small systems will not be required to review monitoring results, although they will be given a 60-day opportunity to review such results prior to their results being posted to the publicly available Web site.

3. What Data Elements Are Required With the Monitoring Results?

a. *New Data Elements.* EPA is proposing to add three new data elements: Water Source Type, Disinfectant Type, and Sample Event Code. Each is discussed in more detail as follows:

• *Water Source Type:* A system's water source type dictates the monitoring frequency (*i.e.*, monitoring is conducted during four consecutive quarters for surface water/GWUDI sampling locations and twice during the monitoring year for ground water sampling locations). Reporting of this data element will help EPA ensure that systems are collecting samples at the required frequency. Systems are required to report either of the following codes for each sampling location:

—SW = surface water (to be reported if the sampling location is served all or in part by a surface water source);
—GW = ground water (to be reported if the sampling location is served entirely by a ground water source); and
—GU = GWUDI (to be reported for water facilities that are served all or in part by ground water under the direct influence of surface water).

• *Disinfectant Residual Type:* This data element will identify the type of disinfectant used to maintain a residual in the distribution system. The nitrosamine, NDMA (one of the Screening Survey contaminants), has been shown to form in chlorinated or chloraminated water as a DBP. Thus, EPA is interested in identifying the type of disinfectant used to maintain a disinfection residual in the distribution system, including whether a disinfectant residual is applied. Reporting of this data element only applies to those systems that are subject to Screening Survey monitoring. These systems will be required to verify that each of the disinfectant code(s) that indicate the type or types of treatment used to maintain a disinfectant residual in the distribution system be reported for each Screening Survey sampling location, as follows:

—CL = chlorine;
—CA = chloramine;
—OT = all other types of disinfectant (*e.g.*, chlorine dioxide); and
—ND = no disinfectant used.

• *Sample Event Code:* This code will provide EPA with a unique identifier to associate reported field sample analytical results with a sampling event and, thus, allow the Agency to track whether scheduled monitoring has been completed. Using this code, PWSs will be required to keep EPA informed of any problems with their monitoring schedule for any given sampling event. For example, if resampling was needed due to problems with laboratory analyses, the system must inform EPA of which scheduled sampling event was being fulfilled by the results of the (unscheduled) resampling by using the Sample Event Code.

b. *Unchanged Data Elements.* There will be no changes to the reporting requirements for the following data elements: Public Water System Identification (PWSID) code, Sample Collection Date, Analytical Method Code, and Analytical Results—Sign.

c. *Modified Data Elements.* The following data reporting elements have been modified.

• *Public Water System Facility Identification Code—Sampling Point Identification Code and Sampling Point Type Identification:* During UCMR 1, Public Water System Facility Identification Code—Sampling Point Identification Code, and Sampling Point Type Identification were all contained in the same data element. EPA is proposing to separate these into three individual data elements, and to clarify the meaning of each, with changes that include:

—for Public Water System Facility Identification Code, a shorter, clearer definition, with length of the code specified as five digits;
—for Sample Point Identification Code, a revised definition which specifies that the same identification code must be used consistently for all current and future unregulated contaminant monitoring to represent the UCMR sampling location; and
—for Sampling Point Type Identification Code, a limitation for UCMR 2 to ''EP'' for entry point to the distribution system and ''MR'' for Stage 1 DBPR maximum residence time in distribution system because sampling under UCMR 2 will be limited to those two sampling locations. Eliminating codes for other sampling point types is intended to reduce confusion.

• *Sample Identification Code:* The size of the Sample Identification Code

has been expanded to include an alphanumeric value of up to 30 characters (formerly capped at 15) assigned by the laboratory. The sample identification code will uniquely identify containers, or groups of containers, which hold the water samples collected at the same PWS/facility/sampling location during the same sample collection date. This proposed action clarifies that the sample identification code must be unique to the sampling event within a PWS for each laboratory. A laboratory may not use the same sample identification code for more than one sampling event.

• *Contaminant/Parameter:* Because there are no water quality parameters being monitored in this proposed regulation, the Contaminant/Parameter data element is being revised to remove ''Parameter'' from the data element name, and the definition is being revised to reflect this change.

• *Analytical Result—Value:* Because the requirement to report the MRL is being removed, the definition of Analytical Result—Value is being revised to remove the requirement to report the MRL when the analytical result is less than the MRL.

• *Sample Analysis Type:* Sample Analysis Type is proposed to be revised to better reflect the type of sample collected. Previously, this data element could have four values: RFS (raw field sample), RDS (raw duplicate sample), TFS (treated field sample), or TDS (treated duplicate sample). These values were reported by the laboratory, which proved to be problematic, since the laboratory did not possess enough knowledge about the PWS treatment system or the location from which the sample was taken to be able to properly assign the correct sample analysis type. EPA is proposing to change the reporting requirements such that laboratories will be able to better define the sample analysis type with the following:

—FS = Field Sample, collected to fulfill the UCMR monitoring requirements;

—LFSM = Laboratory Fortified Sample Matrix, UCMR field sample with a known amount of the contaminant of interest added, associated with precision and accuracy;

—LFSMD = Laboratory Fortified Sample Matrix Duplicate, duplicate of the laboratory fortified sample matrix; and

—CF = Concentration Fortified, the concentration of a known contaminant added to a field sample.

This change will allow EPA to collect quality control information at the FS level instead of a laboratory batch level, and will allow EPA to know which UCMR FS was fortified. One UCMR FS should be fortified in duplicate within each analytical batch containing a UCMR sample. EPA will calculate precision and accuracy of the aggregate UCMR 2 monitoring data using the individual quality control data reported by systems.

• *Laboratory Identification Code:* This data element was formerly part of the Sample Batch Identification Code. Since batch identification is being eliminated, Laboratory Identification Code is being kept as a stand-alone data element. The value will be an EPA-assigned laboratory identification code.

d. *Data Elements No Longer Reported.* EPA is proposing to no longer use the following eight data elements: Analytical Result—Unit of Measure; Minimum Reporting Level (MRL); MRL Unit of Measure; Sample Batch Identification Code; Analytical Precision; Analytical Accuracy; and Presence/Absence.

• *Analytical Result—Unit of Measure, Minimum Reporting Level (MRL), and MRL Unit of Measure:* Each of these data elements are predefined by today's proposed action. All laboratories analyzing UCMR samples will use the same MRL and unit of measure for UCMR analyses. EPA's electronic data reporting system will be populated with the correct values for MRL and unit of measure, so there is no need to report these data elements.

• *Sample Batch Identification Code, Analytical Precision, and Analytical Accuracy:* These data elements are related to laboratory quality control information and laboratory batches. To simplify reporting, EPA is removing requirements to report batches. With the removal of batches, the reporting of associated quality control data such as accuracy and precision will change. Accuracy and precision will be automatically calculated by the data system as follows:

—Precision: Analytical precision will be calculated from reported results for LFSM and LFSMD. Precision is the degree of agreement between two repeated measurements and is monitored through the use of duplicate fortified samples. For purposes of the UCMR, analytical precision is defined as the relative percent difference (RPD) between spiked duplicates analyzed in the same batch of samples as the analytical result. Precision is calculated as RPD between fortified matrix duplicates using:

$$RPD = [(X_1 - X_2) / \{(X_1 + X_2)/ 2\}] \times 100$$

Where:

X_1 is the measured concentration of the LFSM; and

X_2 is the measured concentration of the LFSMD.

—Accuracy: Analytical accuracy will be calculated from reported results for FS, LFSM, and CF. For purposes of the UCMR, analytical accuracy is defined as the percent recovery of the contaminant in the LFSM analyzed in the same analytical batch as the associated FS result and calculated using:

% recovery = [(concentration found in fortified sample − concentration found in sample)/ concentration fortified] × 100.

• *Presence/Absence:* This previously reserved data element was removed from the required list, as there are no analyses currently proposed on UCMR 2 that would require a presence/absence indicator.

K. Time Line of UCMR Activities

Monitoring under UCMR 2 is scheduled for July 2007 through June 2010. Preparation will begin prior to 2007 and will include coordination of laboratory approval, selection of representative samples of systems, development of State Monitoring Plans, and notification of participating PWSs. Assessment Monitoring for List 1 contaminants will be conducted from July 2007 through June 2010. The Screening Survey for List 2 contaminants will be conducted from July 2007 through June 2009. Exhibit 10 illustrates the major activities that will take place in preparation for and during implementation of UCMR 2.

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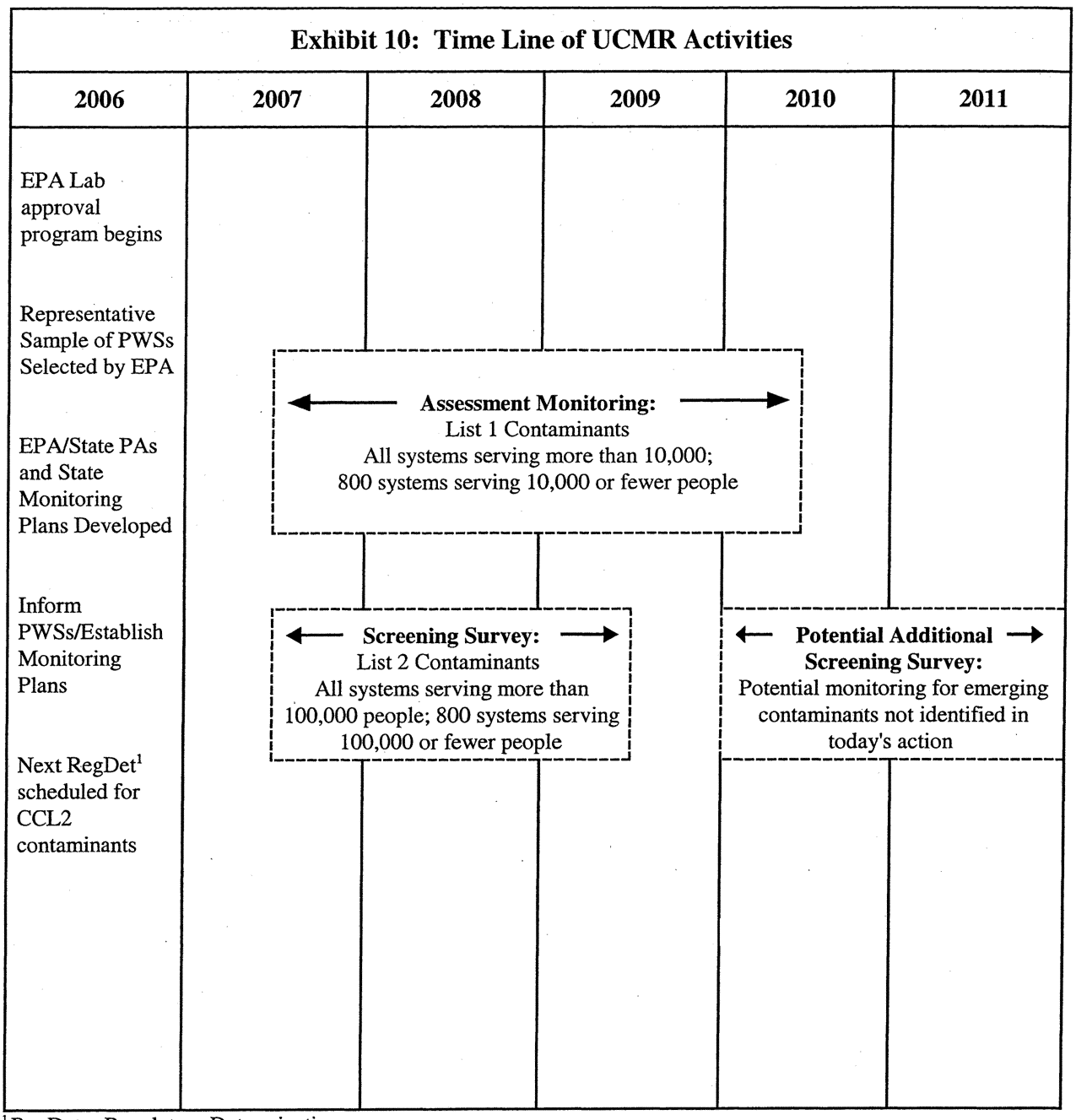

[1] RegDet = Regulatory Determination

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To minimize the impact of the rule on small systems (those serving 10,000 or fewer people), EPA will pay for the sample kit preparation, sample shipping fees, and analysis costs for these systems. In addition, no small system will be required to monitor for more than one monitoring list of UCMR 2. Large systems (those serving more than 10,000 people) will pay for the cost of shipping and laboratory testing. Large systems will be responsible for reviewing, approving, and submitting (*i.e.*, ''reporting'') monitoring results to EPA. Large systems have 60 days from when the laboratory posts the data to then review, approve, and submit the data to the State and EPA, via EPA's electronic data reporting system. If they do not electronically approve the laboratory data within 60 days of the laboratory's posting to EPA's electronic reporting system, the data will be considered approved and final for EPA review. EPA and the State will conduct its quality control review of the data for 60 days after the system reports the data. This will also allow for quality control review by States. After the quality control review, EPA will place the data in the national NCOD at the time of the next database update.

1. Assessment Monitoring

Assessment Monitoring for List 1 contaminants will conducted from July 2007 through June 2010 by all large systems (those systems serving more than 10,000 people), and by a nationally representative sample of 800 small systems (those serving 10,000 people or fewer). Samples will be collected from EPTDSs. However, as clarified in today's proposed action, large ground water systems with multiple EPTDSs may be permitted to sample at representative sampling locations for each ground water source, as long as those sites have been approved by EPA or the State. Samples at ground water locations will be collected twice during a designated consecutive 12-month period. Samples at locations that are fed in whole or part by a surface water or GWUDI source will be collected quarterly during a designated consecutive 12-month period. Large system schedules (year and months of monitoring) will be determined by EPA in conjunction with the States (as described in section III.G.2 of today's action). The Agency will schedule and coordinate small system monitoring, working closely with partnering States. State Monitoring Plans will provide a venue for States to review and revise the initial sampling schedules that EPA proposes. The 11 proposed List 1 contaminants to be monitored under Assessment Monitoring are:

1,3-dinitrobenzene
2,2',4,4'-tetrabromodiphenyl ether (BDE–47)
2,2′,4,4′,5-pentabromodiphenyl ether (BDE–99)
2,2′,4,4′,5,5′-hexabromobiphenyl (245–HBB)
2,2′,4,4′,5,5′-hexabromodiphenyl ether (BDE–153)
2,2′,4,4′,6-pentabromodiphenyl ether (BDE–100)
2,4,6-trinitrotoluene (TNT)
Dimethoate
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
Perchlorate
Terbufos sulfone

2. Screening Survey

Sampling under the Screening Survey for List 2 contaminants will be conducted from July 2007 through June 2009 by all PWSs serving more than 100,000 people, and by a stratified random sample of 800 PWSs serving 100,000 or fewer people. Samples collected at EPTDSs will be analyzed for the 15 contaminants listed below. Because the nitrosamine NDMA can be formed in chlorinated or chloraminated water as a DBP, the concentration may increase as the water travels through the distribution system (Mitch and Sedlak, 2002). Thus, EPA proposes an additional sampling location for the nitrosamines at the DSMRT sampling point defined under the Stage 1 DBPR for each treatment plant that is required to sample for DBPs. For plants that are not required to monitor for DBPs either because the water is not chemically disinfected or because the water is sold directly to another water system, the sampling location for the nitrosamines will be at the EPTDS; no DSMRT sample will be required. Samples at ground water locations will be collected twice during a designated consecutive 12-month period. Samples at locations that are fed in whole or part by a surface water or GWUDI source will be collected quarterly during a designated consecutive 12-month period. The 15 proposed List 2 contaminants to be monitored under the Screening Survey are:

Acetochlor
Acetochlor ESA
Acetochlor OA
Alachlor
Alachlor ESA
Alachlor OA
Metolachlor
Metolachlor ESA
Metolachlor OA
N-nitroso-diethylamine (NDEA)
N-nitroso-dimethylamine (NDMA)
N-nitroso-di-n-butylamine (NDBA)
N-nitroso-di-n-propylamine (NDPA)
N-nitroso-methylethylamine (NMEA)
N-nitroso-pyrrolidine (NPYR)

A summary of the estimated number of systems to monitor under each UCMR 2 component is listed in Exhibit 11.

EXHIBIT 11.— SYSTEMS TO PARTICIPATE IN UCMR 2 MONITORING

System size	Assessment monitoring	Screening survey	Pre-screen testing	Total [2]
	List 1 (July 2007–June 2010)	List 2 (July 2007–June 2009)	List 3 (TBD [1])	
Small Systems:				
25–10,000	800 selected systems	480 selected systems (different than those for List 1).	TBD	1,280
Large Systems:				
10,001–100,000	All (~2,788)	320 selected systems	TBD	~2,788
100,001 and over	All (~322)	All (~322)	TBD	~322
Total	~3,910	~1,122	TBD	~4,390

[1] TBD = To be determined

[2] Totals are not additive for large systems because all large systems conduct Assessment Monitoring, and a subset of these will also conduct Screening Survey monitoring.

IV. Cost and Benefits of Today's Proposed Action

In today's action, EPA proposes a new set of contaminants for monitoring in the second five-year UCMR monitoring cycle. In addition, UCMR 2 makes some modifications to the rule design. UCMR 2 Assessment Monitoring (for List 1 contaminants) will be conducted from July 2007 through June 2010 by 800 systems serving 10,000 or fewer, and by all systems serving more than 10,000 people. It is assumed for this cost estimation that one-third of systems will monitor during each of the three Assessment Monitoring years. The Screening Survey for List 2 contaminants will be conducted from July 2007 through June 2009 by 800 systems serving 100,000 or fewer, and all systems serving more than 100,000 (approximately 320 systems). Small systems (those serving 10,000 or fewer people) will not be subject to more than one component of UCMR 2 monitoring.

Labor costs pertain to systems, States, and EPA. They include activities such as reading the regulation, notifying systems selected to participate, sample collection, data review, reporting, and record keeping. Non-labor costs will be incurred primarily by EPA and by large PWSs. They include the cost of shipping samples to laboratories for testing and the cost of the actual laboratory analyses.

In today's action, EPA proposes nine analytical methods to monitor for 26 new UCMR contaminants (including four method options for perchlorate). Estimated system and EPA costs are based on the analytical costs for these methods. With the exception of Method 525.2, these methods are comparatively new and will not coincide with other compliance monitoring (e.g., no cost savings for coincident monitoring can be realized). Laboratory analysis and shipping of samples account for approximately 73 percent of the national cost for UCMR 2 implementation. These costs are calculated as follows: The number of systems, multiplied by the number of sampling locations, multiplied by the sampling frequency, multiplied by the cost of laboratory analysis. Under UCMR 2, surface water (and GWUDI) sampling points will be monitored four times during the applicable year of monitoring, and ground water sampling points will be monitored twice during the applicable year of monitoring. Screening Survey systems that are required to monitor for DBPs will be required to sample for nitrosamines at one distribution system sampling point per treatment plant (i.e., at the DSMRT), as well as their EPTDS sampling locations. EPA estimates of laboratory fees are based on consultations with national drinking water laboratories and the costs of analytical methods similar to those proposed in today's action, unit costs are as follows:

Assessment Monitoring (List 1):	
GC/MS (for 7 contaminants)	$225
Perchlorate (for 1 contaminant)	150
Explosives (for 3 contaminants)	225
Total	600
Screening Survey (List 2):	
Nitrosamines (for 6 contaminants)	300
Acetanilide degradates (for 6 contaminants)	350
Acetanilide parents (for 3 contaminants)	125
Total	775

Shipping is added to the calculated costs to derive the total direct analytical non-labor costs. Estimated shipping costs were based on the average cost of shipping of a 15-pound package.

Additional changes to the rule are expected to affect costs to small systems as compared to costs under UCMR 1.

- There will be no ''Index System'' component to the UCMR 2 program. Under UCMR 1, samples were taken from a group of 30 small Index Systems during all five years of the monitoring cycle to assess any trends in temporal occurrence, other data variability, or program problems. Based on its experience with UCMR 1, EPA is not proposing Index System monitoring for UCMR 2.
- Small systems will only be involved in one component of monitoring during the five-year cycle. Since there will be a greater number of systems involved in the program, less monitoring will be required of each participating system, thus reducing the average cost per small system.

In preparing the UCMR 2 information collection request (ICR), EPA relied on standard assumptions and data sources used in the preparation of other drinking water program ICRs. These include the PWS inventory, number of sampling points per system, and labor rates. EPA expects that States will incur only labor costs associated with UCMR 2 implementation. State costs were estimated using the relevant modules of the State Resource Model that was recently developed by the Association of State Drinking Water Administrators (ASDWA) in conjunction with EPA (ASDWA, 2003) to help States forecast resource needs. Model estimates were adjusted to account for actual levels of State participation under UCMR 1. Because State participation is determined through the PAs, level of effort will vary across States and depend on their individual agreements with EPA.

Over the UCMR implementation period of 2007–2011, EPA estimates that nationwide, the average annual cost of UCMR 2 is approximately $8.42 million. These total estimated annual costs (labor and non-labor) are incurred as follows:

Respondent	Average annual cost for all respondents (2007–2011) (millions)
Small Systems (25–10,000), including labor only (non-labor costs are paid for by EPA)	$0.05
Large Systems (10,001–100,000), including labor and non-labor costs	4.03
Very Large Systems (100,001 and greater), including labor and non-labor costs	1.53

Respondent	Average annual cost for all respondents (2007–2011) (millions)
States, including labor costs related to implementation coordination	0.49
EPA, including labor for implementation coordination and non-labor for small system testing	2.32
National total	8.42

Additional details regarding EPA's cost assumptions and estimates can be found in the ICR Number 2192.01 amendment prepared for this proposed rule which presents estimated cost and burden for the 2007–2009 period. Estimates of costs over the entire second five-year UCMR cycle of 2007–2011 are attached as an appendix to the ICR. Copies of the ICR and its amendment may be obtained from the EPA public docket for this proposed rule, which includes this ICR, under Docket ID Number OW–2004–0001.

V. Technical Corrections

When EPA published ''Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems; Final Rule,'' on September 17, 1999 (64 FR 50556, (USEPA, 1999c)), two references to § 141.40 in § 141.24 became obsolete, but were not corrected in the 1999 rule. EPA is proposing to correct this technical error by eliminating the reference to requirements for monitoring for aldicarb, aldicarb sulfone, and aldicarb sulfoxide in § 141.24(h) and § 141.24(h)(7)(v).

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866, [58 FR 51735, (October 4, 1993)] the Agency must determine whether a regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a ''significant regulatory action'' under the terms of Executive Order 12866 and is therefore not subject to OMB review.

B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the OMB under the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* The ICR document prepared by EPA has been assigned EPA ICR number of 2192.01.

The information to be collected under today's proposed rule fulfills the statutory requirements of section 1445(a)(2) of SDWA, as amended in 1996. The data to be collected will describe the source of the water, location, and test results for samples taken from PWSs. The concentrations of any identified UCMR contaminants will be evaluated regarding health effects and will be considered for future regulation accordingly. Reporting is mandatory. The data are not subject to confidentiality protection.

The annual burden and cost estimates described below are for the implementation assumptions described in section IV, Cost and Benefits of the Rule, of today's proposed action. Respondents to the UCMR 2 will include 1,280 small water systems (800 for Assessment Monitoring, and 480 for Screening Survey monitoring), the 3,110 large PWSs, and the 56 States and Primacy agencies (4,446 total respondents). The frequency of response varies across respondents and years. System costs (particularly laboratory analytical costs) vary depending on the number of sampling locations. Most Assessment Monitoring systems will conduct sampling evenly across July 2007-June 2010 (*i.e.*, one-third in each of the 3 consecutive 12-month periods). Because the applicable ICR period is 2007–2009, there is one-half year of Assessment Monitoring activity (*i.e.*, January through June of 2010) that is not captured in the ICR estimates.

Small systems (those serving 10,000 or fewer) that are selected for UCMR 2 monitoring will sample an average of 2.2 times per system (*i.e.*, number of responses per system) across the three-year ICR period of 2007–2009. The average burden per response for small systems is estimated to be 3.1 hours. Large systems (those serving 10,001 to 100,000 people) and very large systems (those serving more than 100,000 people) will sample and report an average of 2.5 and 3.6 times per system, respectively, across the three-year ICR period of 2007–2009. The average burden per response for large and very large systems are estimated to be 8.9 and 12.9 hours, respectively. The larger burden per response for the very large systems reflects the fact that these systems typically have more sampling locations than large systems. States are assumed to have an average of 1.0 response per year, related to coordination with EPA and systems, with an average burden per response of 203.2 hours. In aggregate, during the ICR period of 2007–2009, the average response (*e.g.*, responses from systems and States) is associated with a burden of 10.7 hours, with a labor plus non-labor cost of $1,609 per response.

The annual average per respondent burden hours and costs for the ICR period of 2007–2009 are: Small systems—2.3 hour burden at $57 for labor; large systems—7.5 hours at $204 for labor, and $1,894 for analytical costs; very large systems—15.6 hours at $512 for labor, and $7,392 for analytical costs; and States—203.2 hours at $11,107 for labor. Annual average burden and cost per respondent (including both systems and States) is estimated to be 9.02 hours, with a labor plus non-labor cost of $1,355 per respondent (note that small systems do not pay for testing costs, so they only incur labor costs).

The Agency estimates the annual burden to EPA for proposed UCMR program activities during the ICR years of 2007–2009 to be approximately 9,533 hours, at an annual labor cost of $0.60 million. EPA's annual non-labor costs

are estimated to be $2.8 million. EPA's non-labor costs are primarily attributed to the cost of sample testing for small systems (testing is just under 90 percent of non-labor cost).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR Part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this rule, which includes this ICR, under Docket ID No. OW–2004–0001. Submit any comments related to the ICR for this proposed rule to EPA and OMB. See **ADDRESSES** section at the beginning of this action for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW., Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after August 22, 2005, a comment to OMB is best assured of having its full effect if OMB receives it by September 21, 2005. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposed action.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

The RFA provides default definitions for each type of small entity. Small entities are defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any ''not-for-profit enterprise which is independently owned and operated and is not dominant in its field.'' However, the RFA also authorizes an agency to use alternative definitions for each category of small entity, ''which are appropriate to the activities of the agency'' after proposing the alternative definition(s) in the **Federal Register** and taking comment 5 U.S.C. 601(3)–(5). In addition, to establish an alternative small business definition, agencies must consult with SBA's Chief Counsel for Advocacy.

For purposes of assessing the impacts of today's proposed rule on small entities, EPA considered small entities to be PWSs serving 10,000 or fewer people, because this is the system size specified in SDWA as requiring special consideration with respect to small system flexibility. As required by the RFA, EPA proposed using this alternative definition in the **Federal Register**, (63 FR 7605, February 13, 1998 (USEPA, 1998a)), requested public comment, consulted with the Small Business Administration (SBA), and finalized the alternative definition in the Consumer Confidence Reports rulemaking, (63 FR 44511, August 19, 1998 (USEPA, 1998c)). As stated in that Final rule, the alternative definition would be applied to this regulation as well.

After considering the economic impacts of today's proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. The small entities directly regulated by this proposed rule are PWSs serving 10,000 or fewer people. EPA has determined that the small entities subject to the requirements of this proposed rule are a subset of the small PWSs (those serving 10,000 or fewer people). The Agency has determined that 1,280 small PWSs (across Assessment Monitoring and the Screening Survey), or approximately 2 percent of small systems, will experience an impact of less than 0.6 percent of revenues/sales; the remainder of systems will not be impacted.

Although this proposed rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless has tried to reduce the impact of this rule on small entities. To ensure that this proposed rule will not have a significant economic impact on a substantial number of small entities, EPA will assume all costs for analyses of the samples and for shipping the samples from these systems to the laboratories contracted by EPA to analyze UCMR 2 samples. EPA has set aside $2.0 million each year from the State Revolving Fund (SRF) with its authority to use SRF monies for the purposes of implementing this provision of SDWA. Thus, the costs to these small systems will be limited to the labor hours associated with collecting a sample and preparing it for shipping.

The Agency continues to be interested in the potential impacts of the proposed rule on small entities and welcomes comments on issues related to such impacts.

The evaluation of the overall impact on small systems, summarized in the preceding discussion, is further described as follows. EPA analyzed the impacts for privately-owned and publicly-owned water systems separately, due to the different economic characteristics of these ownership types. For publicly-owned systems, EPA used the ''revenue test,'' which compares annual system costs attributed to the rule to the system's annual revenues. EPA used a ''sales test'' for privately-owned systems, which involves the analogous comparison of UCMR-related costs to a privately-owned system's sales. EPA assumes that the distribution of the sample of participating small systems will reflect the proportions of publicly- and privately-owned systems in the national inventory. The estimated distribution of the representative sample, categorized by ownership type, source water, and system size, is presented below in Exhibit 12.

EXHIBIT 12.—NUMBER OF PUBLICLY- AND PRIVATELY-OWNED SYSTEMS SUBJECT TO UCMR 2

System size	Publicly-owned	Privately-owned	Total
Ground Water			
500 and under	102	528	630
501 to 3,300	179	61	240
3,301 to 10,000	95	19	114
Subtotal GW	376	608	984
Surface Water (and GWUDI)			
500 and under	48	53	101
501 to 3,300	95	6	101
3,301 to 10,000	87	7	94
Subtotal SW	230	66	296
Total of Small Water Systems	606	674	1,280

The basis for the UCMR 2 RFA certification for this proposed rule is as follows: For the 1,280 small water systems that will be affected, the average annual costs for complying with this rule represent less than 0.6 percent of system revenues or sales (the highest estimated percentage is for surface water/GWUDI systems serving 500 or fewer people, at 0.53 percent of its median sales). Exhibit 13 presents the yearly costs to small systems, and to EPA for the small system sampling program, along with an illustration of system participation for each year of the UCMR 2 program.

EXHIBIT 13.—EPA AND SMALL SYSTEMS COSTS FOR IMPLEMENTATION UCMR 2

Cost description	2007	2008	2009	2010	2011	Total
Costs to EPA for Small System Program (including Assessment Monitoring, and the Screening Survey)						
	$1,747,951	$3,495,903	$2,278,325	$530,374	$0	$8,052,553
Costs to Small Systems (including Assessment Monitoring, and the Screening Survey)						
	$122,838	$56,789	$37,731	$9,337	$0	$226,695
Total Costs to EPA and Small Systems for UCMR 2						
	$1,870,789	$3,552,692	$2,316,056	$539,711	$0	$8,279,248
System Monitoring Activity Time Line [1]						
Assessment Monitoring	⅓ PWSs Sample	⅓ PWSs Sample	⅓ PWSs Sample			800
Screening Survey	½ PWSs Sample	½ PWSs Sample				480

[1] Total number of systems is 1,280. No small system conducts both Assessment Monitoring and Screening Survey.

System costs are attributed to the additional labor required for reading about their requirements, monitoring, reporting, and record keeping. The estimated average annual burden across the five-year UCMR 2 implementation period of 2007–2011 is estimated to be 1.4 hours at $35 per small system. Average annual cost, in all cases, is less than 0.6 percent of system revenues/sales. As required by the SDWA, the Agency specifically structured the rule to avoid significantly affecting small entities by assuming all costs for laboratory analyses, shipping, and quality control for small entities. As a result, EPA incurs the entirety of the non-labor costs associated with UCMR 2 small system monitoring, or 97 percent of small system testing costs. Exhibits 14 and 15 present the estimated economic impacts in the form of a revenue test for publicly-owned systems and a sales test for privately-owned systems, respectively.

EXHIBIT 14.—UCMR 2 RELATIVE COST ANALYSIS FOR PUBLICLY-OWNED SYSTEMS (2007–2011)

System size	Annual number of systems impacted	Average annual hours per system (2007–2011)	Average annual cost per system (2007–2011)	"Revenue Test" [1] (percent)
Ground Water Systems				
500 and under	20	1.1	$26.38	0.11
501 to 3,300	36	1.3	33.43	0.02
3,301 to 10,000	19	1.8	46.50	0.01
Surface Water (and GWUDI) Systems				
500 and under	9	2.0	47.45	0.20
501 to 3,300	19	2.0	50.63	0.04
3,301 to 10,000	17	2.2	58.46	0.01

[1] The "Revenue Test" was used to evaluate the economic impact of an information collection on small government entities (*e.g.*, publicly-owned systems); costs are presented as a percentage of median annual revenue in each size category.

EXHIBIT 15.—UCMR 2 RELATIVE COST ANALYSIS FOR PRIVATELY-OWNED SYSTEMS (2007–2011)

System size	Annual number of systems impacted	Average annual hours per system (2007–2011)	Average annual cost per system (2007–2011)	"Sales Test" [1] (percent)
Ground Water Systems				
500 and under	105	1.1	$26.38	0.30
501 to 3,300	12	1.3	33.43	0.02
3,301 to 10,000	4	1.8	46.50	.01
Surface Water (and GWUDI) Systems				
500 and under	11	2.0	47.45	0.53
501 to 3,300	1	2.0	50.63	0.03
3,301 to 10,000	1	2.2	58.46	0.01

[1] The "Sales Test" was used to evaluate the economic impact of an information collection on small private entities (e.g., privately-owned systems); costs are presented as a percentage of median annual sales in each size category.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Total annual costs of today's proposed rule (across the implementation period of 2007–2011), for State, local, and Tribal governments and the private sector, are estimated to be $8.42 million, of which EPA will pay $2.32 million, or approximately 28 percent. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. The Agency will pay for the reasonable costs of sample analysis for the small PWSs required to monitor for unregulated contaminants under this proposed rule, including those owned and operated by small governments. The only costs that small systems will incur are those attributed to collecting the UCMR samples and packing them for shipping to the laboratory (EPA will pay for shipping). These costs are minimal. They are not significant or unique. Thus, today's rule is not subject to the requirements of UMRA section 203.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This proposed rule does not have Federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132.

The cost to State and local governments is minimal, and the rule does not preempt State law. Thus, Executive Order 13132 does not apply to this rule. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on the proposed rule from State and local officials.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.''

EPA has concluded that this proposed rule will have Tribal implications. However, it will neither impose substantial direct compliance costs on Tribal governments, nor preempt Tribal law. As described previously, this proposed rule requires monitoring by all large systems (i.e., those serving more than 10,000 people); one Tribal water system (the Navajo Tribal Utility Authority) has been identified as a large system. This proposal rule also requires monitoring by a nationally representative sample of small systems (i.e., those serving 10,000 or fewer people). EPA estimates that approximately one percent of small Tribal systems will be selected as part of such sample.

With regard to the single large Tribal system, EPA estimates the average annual cost for a large system over the five-year rule period to be less than $1,500. Such cost is based on a labor component (associated with the collection of samples) and a non-labor component (associated with shipping and laboratory fees) and represents less than 0.05 percent of average revenue/sales for large systems.

With regard to small Tribal systems that may be selected as part of the nationally representative sample, EPA estimates the average annual cost over the five-year rule period to be $35. Such cost is based on the labor associated with collecting a sample and preparing it for shipping and represents less than 0.6 percent of average revenue/sales for small systems. All other small-system expenses (associated with shipping and laboratory fees) are paid by EPA.

EPA consulted with Tribal officials early in the process of developing the UCMR program to permit them to have meaningful and timely input into its development. In developing the original UCMR rule, EPA held stakeholder meetings and prepared background information for stakeholder review. EPA sent requests for review of stakeholder documents to nearly 400 Tribes, Tribal organizations, and small systems organizations to obtain their input. Representatives from the Indian Health Service (IHS) Sanitary Deficiency System (SDS) and Tribes were consulted regarding decisions on rule design, the design for the statistical selection of small systems, and potential costs.

Tribes raised issues concerning the selection of the nationally representative sample of small systems, particularly the manner in which Tribal systems would be considered under the sample selection process. EPA developed the sample frame for Tribal systems and Alaska Native water systems in response to those concerns. EPA worked with the Tribes, Alaska Natives, the IHS, and the States to determine how to classify each Tribal system for consideration in the statistically-based selection of the nationally representative sample of small systems. As a result of those discussions, small PWSs that are located in Indian country in each of the EPA Regions containing Indian country were evaluated as part of a Tribal category that receives selection consideration comparable to that of small systems outside of Indian country. Thus, Tribal systems have the same probability of being selected as other water systems in the stratified selection process that weighs systems by water source and size class by population served.

Today's proposed rule, addressing the next UCMR period, maintains the basic program design of the original UCMR, building upon the structure established by the original rule for this cyclical program. The primary changes include: (1) Improving the design of the Screening Survey for List 2 contaminants to increase the statistical strength of the sampling results; (2) updating the lists of contaminants to be monitored and the analytical methods approved to conduct that monitoring; (3) revising the ''data elements'' required to be reported; and (4) revising the implementation of the monitoring program to reflect ''lessons learned'' during UCMR 1.

As part of the development of this proposed rule, EPA held a public stakeholder meeting on October 23, 2003. This meeting was announced to the public in a **Federal Register** notice dated September 11, 2003. Prior to the meeting, background materials and rule development information were sent to specific stakeholders, including representatives from the Indian Health Service and the Native American Water Association.

EPA specifically solicits additional comment on this proposed rule from Tribal officials.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to any rule that: (1) Is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This proposed rule is part of the Agency's overall strategy for deciding whether to regulate the contaminants identified on the CCL (63 FR 10274, March 2, 1998 (USEPA, 1998b)). The purpose of today's proposed rule is to ensure that EPA has data on the occurrence of contaminants on the CCL where those data are lacking. EPA is also taking steps to ensure that the Agency will have data on the health effects of these contaminants on

children through its research program. The Agency will use these data (both contaminant occurrence and health effects) to help decide whether or not to regulate any of these contaminants.

This proposed rule is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. However, given EPA's interest in protecting children's health, as part of the provisions in the rule allowing State Governors to petition EPA to add contaminants to the UCMR Contaminant List, EPA is specifically asking Governors to include any information that might be available regarding disproportional risks to the health or safety of children. Such information would help inform EPA's decision making regarding the UCMR Contaminant List.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, Section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves technical standards. Therefore, the Agency conducted a search to identify potentially applicable voluntary consensus standards. In preparing this proposed action, EPA searched for consensus methods published by the three major voluntary consensus method organizations, Standard Methods, Association of Analytical Communities International, and American Society for Testing and Materials, that would be acceptable for compliance determinations under SDWA for the Unregulated Contaminant Monitoring List. However, EPA identified no such standards. For those parameters included in this proposed action, EPA was unable to use methods from either EPA or voluntary consensus method organizations that were applicable to the monitoring required. Therefore, EPA proposes to use the methods development that the Agency conducted (described in section III.B), which was necessary to establish acceptable methods for the determination of these UCMR 2 parameters.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' (February 11, 1994), focuses Federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities.

By seeking to identify unregulated contaminants that may pose health risks via drinking water from all PWSs, UCMR furthers the protection of public health for all citizens, including minority and low-income populations using public water supplies. Using a statistically-derived set of systems for the nationally representative sample that is population-weighted within each system size category in each State, the proposed rule ensures that no group within the population is under-represented.

VII. Public Involvement in Regulation Development

EPA's Office of Ground Water and Drinking Water has developed a process for stakeholder involvement in its regulatory activities for the purpose of providing early input to regulation development. When designing and developing the UCMR program, in the late 1990s, EPA held meetings for developing the CCL, establishing the information requirements of the NCOD, and selecting priority contaminants for monitoring. During the initial development of the UCMR program, stakeholders, including PWSs, States, industry, and other organizations attended meetings to discuss the UCMR. Seventeen other meetings were held specifically concerning UCMR development. For a description of public involvement activities related to the UCMR, please see the discussion in the September 1999 UCMR Final Rule **Federal Register** at 64 FR 50556 (USEPA, 1999c).

Specific to the development of UCMR 2, a stakeholder meeting was held on October 29, 2003, in Washington, DC. There were 25 attendees, representing State agencies, federal agencies, laboratories, PWSs, and drinking water associations. The topics of presentations and discussions included: Rationale for selecting a new list of proposed contaminants; analytical methods to be used in measuring these contaminants; sampling design, particularly for the Screening Survey monitoring; procedure for determining LCMRLs; validation of laboratory performance at or below the MRL; revisions to data elements; and other proposed revisions based on lessons learned during implementation of UCMR 1.

VIII. References

Agency for Toxic Substances and Disease Registry (ATSDR). 1989. Toxicological Profile for N-Nitrosodimethylamine. Atlanta, GA: Agency for Toxic Substances and Disease Registry, Public Health Service, U.S. Department of Health and Human Services. Available on the Internet at: *http://www.atsdr.cdc.gov/toxprofiles/tp141.pdf.*

ATSDR. 1995a. Toxicological Profile for 1,3-Dinitrobenzene and 1,3,5-Trinitrobenzene. Available on the Internet at: *http://www.atsdr.cdc.gov/toxprofiles/tp74.html.*

ATSDR. 1995b. Toxicological Profile for RDX. Available on the Internet at: *http://www.atsdr.cdc.gov/toxprofiles/tp78.html.*

ATSDR. 1995c. Toxicological Profile for 2,4,6-Trinitrotoluene. Available on the Internet at: *http://www.atsdr.cdc.gov/toxprofiles/tp81.html.*

ATSDR. 2002. Toxicological Profile for Polybrominated Biphenyls and Polybrominated Diphenyl Ethers (PBBs AND PBDEs)—Draft for Public Comment. September 2002. Available on the Internet at: *http://www.atsdr.cdc.gov/toxprofiles/tp68.html.*

Association of State Drinking Water Administrators (ASDWA). 2003. Public Health Protection Threatened by Inadequate Resources for State Drinking Water Programs—An Analysis of State Drinking Water Programs Resources, Needs, and Barriers. April 2003. Available on the Internet at: *http://www.asdwa.org/.*

Burrows, W. D. 1982. Tertiary treatment of effluent from Holston AAP industrial liquid waste treatment facility I. Batch carbon adsorption studies: TNT, RDX, HMX, TAX, and SEX. Technical Report 8207. Document no. ADA121244. U.S. Army Armament Research and Development Command, NJ.

California Department of Health Services (CADHS). 2002. Studies on the Occurrence of NDMA in Drinking Water. Available on the Internet at: *http://www.dhs.ca.gov/ps/ddwem/chemicals/NDMA/studies.htm.*

California Environmental Protection Agency (CAEPA). 2002. Draft Groundwater Information Sheet: N-Nitrosodimethylamine (NDMA). Prepared By: John Borkovitch, R.G., Revised: October 23, 2002. Available on the Internet at: *http://www.swrcb.ca.gov/gama/docs/ndma_oct2002_rev3.pdf.*

Choi, J., S.E. Duirk, and R.L. Valentine. 2002. Mechanistic studies of N-nitrosodimethylamine (NDMA) formation in chlorinated drinking water. Journal of Environmental Monitoring. Vol. 4, No. 2. pp. 249–52.

Choi, J., and R.L. Valentine. 2002a. Formation of N-nitrosodimethylamine (NDMA) from reaction of monochloramine: a new disinfection by-product. Water Research. Vol. 36, No. 4. pp. 817–824.

Choi, J., and R.L. Valentine. 2002b. A kinetic model of N-nitrosodimethylamine (NDMA) formation during water chlorination/chloramination. Water Science and Technology. Vol. 46, No. 3. pp. 65–71.

Darnerud, P.O., G.S. Erickson, T. Johannesson, P.B. Larson, and M. Viluksela. 2001. Polybrominated Diphenyl Ethers: Occurrence, Dietary Exposure, and Toxicology. Environmental Health Perspectives Supplements. Vol. 109, No. S1. Available on the Internet at: *http://ehp.niehs.nih.gov/members/2001/suppl-1/49-68darnerud/darnerud-full.html.*

Hazardous Substances Database (HSDB). 1986. Complete Record for Dimethoate. Available on the Internet at: *http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB.*

Hites, R. 2004. Polybrominated Diphenyl Ethers in the Environment and in People: A Meta-Analysis of Concentration. Environmental Science and Technology. Vol. 38, No. 4. pp. 945–956.

Mitch, W.A., and D.L. Sedlak. 2002. Formation of N-Nitrosodimethylamine (NDMA) from Dimethylamine during Chloramination. Environmental Science and Technology. Vol. 36, No. 4. pp. 588–595.

Scribner, E.A., E.M. Thurman, and L.R. Zimmerman. 2000. ''Analysis of Selected Herbicide Metabolites in Surface and Ground Water of the United States.'' Kolpin, D.W. (ed.), Special Issue: Fate and Transport of Agricultural Chemicals in the Mississippi River Basin: Science of the Total Environment. 248(2,3):159–168. Available on the Internet at: *http://ks.water.usgs.gov/Kansas/pubs/reports/wrir.99-4018B.toxicss2.pdf.*

USEPA. 1994. Pesticide Tolerances for Acetochlor; Rules and Regulations. **Federal Register**. Vol. 59, No. 56. p. 13654, March 23, 1994.

USEPA. 1995. Method 525.2—Determination of Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry. Available on the Internet at: *http://www.NEMI.gov.*

USEPA. 1996a. Pesticide Tolerances for Dimethenamid. **Federal Register**. Vol. 61, No. 52. p. 10681, March 15, 1996.

USEPA. 1996b. National Primary Drinking Water Regulations: Monitoring Requirements for Public Drinking Water Supplies: Cryptosporidium, Giardia, Viruses, Disinfection Byproducts, Water Treatment Plant Data and Other Information Requirements. **Federal Register**. Vol. 61, No. 94. p. 24354, May 14, 1996.

USEPA. 1997. Announcement of the Draft Drinking Water Contaminant Candidate List; Notice. **Federal Register**. Vol. 62, No. 193. p. 52194, October 6, 1997.

USEPA. 1998a. National Primary Drinking Water Regulations: Consumer Confidence Reports; Final Rule. **Federal Register**. Vol. 63, No. 30. p. 7605, February 13, 1998.

USEPA. 1998b. Announcement of the Drinking Water Contaminant Candidate List; Notice. **Federal Register**. Vol. 63, No. 40. p. 10274, March 2, 1998.

USEPA. 1998c. National Primary Drinking Water Regulations: Consumer Confidence Reports. **Federal Register**. Vol. 63, No. 160. p. 44511, August 19, 1998.

USEPA. 1999a. Federal Facilities Forum Issue: Field Sampling and Selecting On-site Analytical Methods for Explosives in Water. Office of Research and Development, Office of Solid Waste and Emergency Response. Prepared by A.B. Crickett, H.D. Craig, and T.F. Jenkins. EPA 600–S–99–002. May 1999. Available on the Internet at: *http://www.epa.gov/tio/tsp/download/water.pdf.*

USEPA. 1999b. Human Health Risk Assessment: Terbufos. Office of Prevention, Pesticides and Toxic Substances. September 2, 1999. Available on the Internet at: *http://www.epa.gov/pesticides/op/terbufos/_revrisk.pdf.*

USEPA. 1999c. Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems; Final Rule. **Federal Register**. Vol. 64, No. 180. p. 50556, September 17, 1999.

USEPA. 1999d. Dimethoate Revised Risk Assessment. Office of Prevention, Pesticides and Toxic Substances. December 16, 1999. Available on the Internet at: *http://www.epa.gov/pesticides/op/dimethoate/hedrra.pdf.*

USEPA. 1999e. EPA Method 314.0—Determination of Perchlorate in Drinking Water Using Ion Chromatography. Available on the Internet at: *http://www.epa.gov/safewater/methods/sourcalt.html.*

USEPA. 1999f. Revised Chapter for Dimethoate RED. Available on the Internet at: *http://www.epa.gov/pesticides/op/dimethoate/efedrra.pdf.*

USEPA. 2000a. Unregulated Contaminant Monitoring Regulation for Public Water Systems: Analytical Methods for Perchlorate and Acetochlor; Announcement of Laboratory Approval and Performance Testing (PT) Program for the Analysis of Perchlorate; Final Rule and Proposed Rule. **Federal Register**. Vol. 65, No. 42. p. 11372, March 2, 2000.

USEPA. 2000b. Science Policy Council Handbook, Peer Review. EPA 100–B–00–001. December 2000. Available on the Internet at: *http://epa.gov/osa/spc/htm/rchandbk.pdf.*

USEPA. 2001a. Unregulated Contaminant Monitoring Regulation for Public Water Systems; Analytical Methods for List 2 Contaminants; Clarifications to the Unregulated Contaminant Monitoring Regulation. **Federal Register**. Vol. 66, No. 8. p. 2273, January 11, 2001.

USEPA. 2001b. Unregulated Contaminant Monitoring Regulation for Public Water Systems; Analytical Methods of List 2 Contaminants; Clarifications to the Unregulated Contaminant Monitoring Regulation; Correction. **Federal Register**. Vol. 66, No. 95. p. 27215, May 16, 2001.

USEPA. 2001c. Statistical Design and Sample Selection for the UCMR 1. EPA 815–R–01–004. August 2001. Available on the Internet at: *http://www.epa.gov/safewater/ucmr/ucmr1/pdfs/guidance_ucmr1_statistical_design.pdf.*

USEPA. 2001d. Unregulated Contaminant Monitoring Regulation for Public Water Systems; Amendment to the List 2 Rule and Partial Delay of Reporting of Monitoring Results. **Federal Register**. Vol. 66, No. 171. p. 46221, September 4, 2001.

USEPA. 2002a. 2002 Edition of the Drinking Water Standards and Health Advisories. EPA 822–R–02–038.

USEPA. 2002b. Unregulated Contaminant Monitoring Regulation for Public Water Systems; Establishment of Reporting Date. **Federal Register**. Vol. 67, No. 48. p. 11043, March 12, 2002.

USEPA. 2002c. EPA Dockets; EPA's New Electronic Public Docket and Comment System; Notice of Availability. **Federal Register**. Vol. 67, No. 105. p. 38102, May 31, 2002.

USEPA. 2002d. Unregulated Contaminant Monitoring Regulation: Approval of Analytical Method for Aeromonas; National Primary and Secondary Drinking Water Regulations: Approval of Analytical Methods for Chemical and Microbiological Contaminants. **Federal Register**. Vol. 67, No. 209. p. 65888, October 29, 2002.

USEPA. 2003a. Dimethoate Summary. Office of Prevention, Pesticides and Toxic Substances. Last updated January 6, 2003. Available on the Internet at: *http://www.epa.gov/pesticides/op/dimethoate/dimethsumm.htm.*

USEPA. 2003b. National Primary Drinking Water Regulations: Stage 2 Disinfectants and Disinfection Byproducts Rule; National Primary and Secondary Drinking Water Regulations: Approval of Analytical Methods for Chemical Contaminants; Proposed Rule. **Federal Register**. Vol. 68, No. 159. p. 49547, August 18, 2003.

USEPA. 2003c. EPA Method 529—Determination of Explosives and Related Compounds in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS). Available on the Internet at: *http://www.epa.gov/nerlcwww/ordmeth.htm.*

USEPA. 2003d. USEPA Integrated Risk Information System. Available on the Internet at: *http://www.epa.gov/iris/index.html.* Accessed for the following contaminants: Acetochlor—CASRN 34256–82–1; Alachlor—CASRN 15972–60–8; Dimethoate—CASRN 60–51–5; m-Dinitrobenzene—CASRN 99–65–0; Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)—CASRN 121–82–4; Metolachlor—CASRN 51218–45–2; N–Nitrosodimethylamine—CASRN 62–75–9; and, 2,4,6-Trinitrotoluene (TNT)—CASRN 118–96–7.

USEPA. 2003e. UCMR 2: Contaminant Selection Rationale. Draft background documentation presented at the UCMR 2

stakeholder meeting, held on October 29, 2003 in Washington, DC.

USEPA. 2004a. 2004 Edition of the Drinking Water Standards and Health Advisories. EPA 822–R–04–005.

USEPA. 2004b. EPA Method 314.1—Determination of Perchlorate in Drinking Water Using Inline Column Concentration/Matrix Elimination Ion Chromatography with Suppressed Conductivity Detection. Available on the Internet at: *http://www.epa.gov/safewater/methods/sourcalt.html.*

USEPA. 2004c. EPA Method 331.0—Determination of Perchlorate in Drinking Water by Liquid Chromatography Electrospray Ionization Mass Spectrometry. EPA 815–R–05–007. January 2005. Available on the Internet at: *http://www.epa.gov/safewater/methods/sourcalt.html.*

USEPA. 2004d. EPA Method 332.0—Determination of Perchlorate in Drinking Water Using Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. Available on the Internet at: *http://www.epa.gov/nerlcwww/ordmeth.htm.*

USEPA. 2004e. EPA Method 521—Determination of Nitrosamines in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography with Large Volume Injection and Chemical Ionization Tandem Mass Spectrometry (MS/MS). Available on the Internet at: *http://www.epa.gov/nerlcwww/ordmeth.htm.*

USEPA. 2004f. EPA Method 527—Determination of Selected Pesticides and Flame Retardants in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS). EPA 815–R–05–005. April 2005. Available on the Internet at: *http://www.epa.gov/safewater/methods/sourcalt.html.*

USEPA. 2004g. EPA Method 535, Revision 1.1—Measurement of Chloroacetanilide and Other Acetamide Herbicide Degradates in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). Available on the Internet at: *http://www.epa.gov/nerlcwww/ordmeth.htm.*

USEPA. 2004h. Estimating Potency Scores: An Exercise. Office of Science and Technology, Health and Ecological Criteria Division. Draft, June 29, 2004.

USEPA. 2004i. Evaluation of the Lowest Concentration Minimum Reporting Level (LCMRL) and the Minimum Reporting Level (MRL) Primary Analyte Analysis. October 2004.

USEPA. 2004j. Statistical Protocol for the Determination of the Single-Laboratory Lowest Concentration Minimum Reporting Level (LCMRL) and Validation of the Minimum Reporting Level (MRL). EPA 815–R–05–006.

USEPA. 2004k. UCMR 2 Laboratory Approval Requirement and Information Document. Available on the Internet at: *http://www.epa.gov/safewater/ucmr/ucmr2/index.html.*

USEPA. 2005. Drinking Water Candidate Contaminant List 2; Final Notice. **Federal Register**. Vol. 70, No. 36. p. 9071, February 24, 2005.

List of Subjects in 40 CFR Part 141

Environmental protection, Chemicals, Indians-lands, Intergovernmental relations, Radiation protection, Reporting and record keeping requirements, Water supply.

Dated: August 12, 2005.

Stephen L. Johnson,

Administrator.

For the reasons set out in the preamble, title 40, chapter 1 of the Code of Federal Regulations is proposed to be amended as follows:

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

1. The authority citation for part 141 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

Subpart C—[Amended]

2. Section 141.24 is amended by revising paragraphs (h) introductory text and (h)(7)(v) to read as follows:

§ 141.24 Organic chemical, sampling and analytical requirements.

* * * * *

(h) Analysis of the contaminants listed in § 141.61(c) for the purposes of determining compliance with the maximum contaminant level shall be conducted as follows:

* * * * *

(7) * * *

(v) If the monitoring results in detection of one or more of certain related contaminants (heptachlor and heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

* * * * *

Subpart D—[Amended]

3. Section 141.35 is revised to read as follows:

§ 141.35 Reporting for unregulated contaminant monitoring.

(a) *General applicability.* This section applies to any owner or operator of a public water system (PWS) required to monitor for unregulated contaminants under § 141.40(a): Such owner or operator is referred to as ''you.'' This section specifies the information that must be reported to EPA prior to the commencement of monitoring, and describes the process for reporting monitoring results to EPA. For the purposes of this section, PWS ''population served'' includes the sum of the retail population served directly by the PWS plus the population served by any consecutive system(s) receiving all or part of its finished water from that PWS. For purposes of this section, the term ''State'' refers to the State or Tribal government entity that has jurisdiction over your PWS even if that government does not have primary enforcement responsibility for PWSs under the Safe Drinking Water Act. For purposes of this section, the term ''PWS Official'' refers to the person at your PWS who is able to function as the official spokesperson for the system's Unregulated Contaminant Monitoring Regulation (UCMR) activities; and the term ''PWS Technical Contact'' refers to the person at your PWS who is responsible for the technical aspects of your UCMR activities, such as details concerning sampling and reporting.

(b) *Reporting by all systems.* You must meet the reporting requirements of this paragraph if you meet the applicability criteria in § 141.40(a)(1) and (2).

(1) *Where to submit UCMR reporting requirement information.* Some of your reporting requirements are to be fulfilled electronically, and others by mail. Information that must be submitted using EPA's electronic data reporting system can be accessed through: *http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html.* Documentation that is required to be mailed can be submitted either: to UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or by e-mail at *UCMR_Sampling_Coordinator@epa.gov;* or by fax at (513) 569–7191. In addition, you must notify the public of the monitoring results as provided in Subpart O (Consumer Confidence Reports) and Subpart Q (Public Notification) of this part.

(2) *Contacting EPA if your system does not meet applicability criteria or has status change.* If you have received a letter from EPA concerning your required monitoring and your system does not meet the applicability criteria for UCMR established in § 141.40(a)(1) and (2), or if a change occurs at your system that may affect your requirements under UCMR as defined in § 141.40(a)(3)–(5), you must fax, mail, or e-mail a letter to EPA, as specified in paragraph (b)(1) of this section. The letter must be from your PWS Official and must include an explanation as to why the UCMR requirements are not applicable to your PWS, or have changed for your PWS, along with the appropriate contact information. EPA will make an applicability determination based on your letter and in consultation with the State when necessary. If you meet the applicability

requirements specified in § 141.40(a)(1) and (2), you are subject to UCMR requirements until or unless you receive a letter from EPA agreeing that you do not meet the applicability criteria.

(c) *Reporting by large systems.* If you serve a population of more than 10,000 people, and meet the applicability criteria in § 141.40(a)(1) and (2)(i), you must meet the reporting requirements in paragraph (c)(1) through (8) of this section.

(1) *Contact information.* You must provide contact information by [DATE 90 DAYS AFTER PUBLICATION OF THE FINAL RULE], and provide updates within 30 days if this information changes. The contact information must be submitted using EPA's electronic data reporting system, as specified in paragraph (b)(1) of this section, and include the name, affiliation, mailing address, phone number, fax number, and e-mail address for your PWS Technical Contact and your PWS Official.

(2) *Sampling location and inventory information.* You must provide your sampling location and inventory information by [DATE 210 DAYS AFTER PUBLICATION OF THE FINAL RULE] using EPA's electronic data reporting system. You must submit the following information for each sampling location, or for each approved representative sampling location (as specified in paragraph (c)(3) of this section regarding representative sampling locations): PWS identification (PWSID) code; PWS facility identification code; sampling point identification code; sampling point type identification code; sampling location water type, which are defined in Table 1, paragraph (e) of this section. If this information changes, you must report updates to EPA's electronic data reporting system within 30 days of the change.

(3) *Proposed ground water representative sampling locations.* Some systems that use ground water as a source and have multiple entry points to the distribution system (EPTDSs) may propose monitoring at representative entry point(s), rather than monitor at every EPTDS, as follows:

(i) *Qualifications.* Large PWSs that have State-approved alternate EPTDS sampling locations, as provided for under §§ 141.23(a)(1), 141.24(f)(1), and 141.24(h)(1), may submit a copy of documentation from their State that approves their alternative sampling plan for EPTDSs. PWSs that do not have an approved alternative EPTDS sampling plan may submit a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS if: they use ground water as a source; all of their well sources have either the same treatment or no treatment; and they have an EPTDS for each well within a well field (resulting in multiple EPTDSs from the same source, such as an aquifer). You must submit a copy of the existing alternate EPTDS sampling plan or your representative well proposal, as appropriate, by [INSERT DATE 120 DAYS AFTER PUBLICATION OF THE FINAL RULE].

(ii) *Demonstration.* If you are submitting a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS, you must demonstrate that any EPTDS that you select as representative of the ground water you supply from multiple wells is associated with a well that draws from the same aquifer as the wells it will represent. You must submit the following information for each proposed representative sampling location: PWSID Code, PWS facility identification code, and sampling point identification code (as defined in Table 1, paragraph (e) of this section). You must also include documentation to support your proposal that the specified wells are representative of other wells. This documentation can include system-maintained well logs or construction drawings indicating comparable depths (relative to elevation datum) of screened intervals, and details of well casings and grouting; data demonstrating relative homogeneity of water quality constituents (*e.g.*, pH, dissolved oxygen, conductivity, iron, manganese) in samples drawn from each well; and data showing that your wells are located in a limited geographic area (*e.g.*, all wells within a 0.5 mile radius) and/or, if available, the hydrogeologic data indicating the time of travel separating the representative well from each of the individual wells it represents (*e.g.*, all wells within a five-year time of travel delineation). Your proposal must be sent in writing to EPA, as specified in paragraph (b)(1) of this section. You must also provide a copy of this information to the State, unless otherwise directed by the State. Information about the actual or potential occurrence or non-occurrence of contaminants in an individual well, or a well's vulnerability to contamination must not be used as a basis for selecting a representative well.

(iii) *Approval.* EPA or the State (as specified in the Partnership Agreement reached between the State and EPA) will review your proposal, coordinate any necessary changes with you, and approve the final list of EPTDSs where you will be required to monitor. Your plan will not be final until you receive written approval from EPA or the State.

(4) *Contacting EPA if your PWS has not been notified of requirements.* If you believe you are subject to UCMR requirements, as defined in § 141.40(a)(1) and (2)(i), and you have not been notified by either EPA or your State by [DATE 150 DAYS AFTER PUBLICATION OF THE FINAL RULE], you must send a letter to EPA, as specified in paragraph (b)(1) of this section. The letter must be from your PWS Official, and must include an explanation as to why the UCMR requirements are applicable to your system along with the appropriate contact information. A copy of the letter must also be submitted to the State, as directed by the State. EPA will make an applicability determination based on your letter, and in consultation with the State when necessary, and will notify you regarding your applicability status and required sampling schedule. However, if your PWS meets the applicability criteria specified in § 141.40(a)(1) and (2)(i), you are subject to the UCMR monitoring and reporting requirements, regardless of whether or not you have been notified by the State or EPA.

(5) *Notifying EPA if your PWS cannot sample according to schedule.* You may change you Assessment Monitoring (List 1) or Screening Survey (List 2) schedule up to [DATE 210 DAYS AFTER PUBLICATION OF THE FINAL RULE] using EPA's electronic data reporting system, as specified in paragraph (b)(1) of this section. After these dates have passed, if your PWS cannot sample according to your assigned sampling schedule (*e.g.*, because of budget constraints, or if a sampling location will be closed during scheduled month of monitoring), you must fax, mail, or e-mail a letter to EPA, as specified in paragraph (b)(1) of this section, prior to the scheduled sampling date. You must include an explanation of why the samples cannot be taken according to the assigned schedule, and requesting an alternative schedule. You are subject to your assigned UCMR sampling schedule or the schedule that you revised on or before [DATE 210 DAYS AFTER PUBLICATION OF THE FINAL RULE], until and unless you receive a letter from EPA specifying a new schedule.

(6) *Reporting monitoring results.* For each sample, you must report the information specified in Table 1 of paragraph (e) of this section, using EPA's electronic data reporting system. If you are conducting Assessment Monitoring, you must include data elements 1 through 5, and 7 through 15;

and if you are conducting Screening Survey, you must include elements 1 through 15. You also must report any changes made to data elements 1 through 6 to EPA, in writing, explaining the nature and purpose of the proposed change, as specified in paragraph (b)(1) of this section.

(i) *Electronic reporting system.* You are responsible for ensuring that the laboratory conducting unregulated contaminant analysis posts the analytical results to EPA's electronic reporting system. You are also responsible for reviewing, approving, and submitting those results to EPA.

(ii) *Reporting schedule.* You must ensure that your laboratory posts the data in EPA's electronic data reporting system within 120 days from the sample collection date (sample collection must occur as specified in § 141.40(a)(4)). You have 60 days from when the laboratory posts the data in EPA's electronic data reporting system to review, approve, and submit the data to the State and EPA, at the Web address specified in paragraph (b)(1) of this section. If you do not take action on the data within 60 days of the laboratory's posting to the electronic reporting system, the data will be considered approved by you, and available for EPA and State review.

(7) *Only one set of results accepted.* If you report more than one set of valid results for the same sampling location and the same sampling event (for example, because you have had more than one laboratory analyze replicate samples collected under § 141.40(a)(5), or because you have collected multiple samples during a single monitoring event at the same sampling location), EPA will use the highest of the reported values as the official result.

(8) *No reporting of previously collected data.* You cannot report previously collected data to meet the testing and reporting requirements for the contaminants listed in § 141.40(a)(3). All analyses must be performed by laboratories approved by EPA to perform UCMR analyses using the analytical methods specified in Table 1 of § 141.40(a)(3) and using samples collected according to the approved monitoring plan. Such requirements preclude the possibility of ''grandfathering'' previously collected data.

(d) *Reporting by small systems.* If you serve a population of 10,000 or fewer people, and you are notified that you have been selected for UCMR monitoring, your reporting requirements will be specified within the materials that EPA sends you, including a request for contact information, and a request for information associated with the sampling kit.

(1) *Contact information.* EPA will send you a notice requesting contact information for key individuals at your system, including name, affiliation, mailing address, phone number, fax number, and e-mail address. These individuals include your PWS Technical Contact and your PWS Official. You are required to provide this information within 90 days of receiving the notice from EPA. If this information changes, you also must provide updates within 30 days of the change.

(2) *Reporting sampling information.* You must record data elements listed in Table 1 of paragraph (e) of this section, on each sample form and sample bottle provided to you by your UCMR Sampling Coordinator. If you are conducting Assessment Monitoring, you must include elements 1 through 5, and 7; and if you are conducting Screening Survey, you must include elements 1 through 7. You must send this information as specified in the instructions of your sampling kit, which will include the due date and return address. You must report any changes made in data elements 1 through 6 by mailing or e-mailing an explanation of the nature and purpose of the proposed change to EPA, as specified in paragraph (b)(1) of this section.

(e) *Data elements.* Table 1 defines the data elements that must be provided with UCMR sample results.

TABLE 1.—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS

Data element	Definition
1. Public Water System Identification (PWSID) Code.	The code used to identify each PWS. The code begins with the standard 2-character postal State abbreviation or Region code; the remaining 7 numbers are unique to each PWS in the State. The same identification code must be used to represent the PWS identification for all current and future UCMR monitoring.
2. Public Water System Facility Identification Code.	An identification code established by the State or, at the State's discretion, by the PWS, following the format of a 5-digit number unique within each PWS for each applicable facility (*i.e.*, for each source of water, treatment plant, distribution system, or any other facility associated with water treatment or delivery). The same identification code must be used to represent the facility identification for all current and future UCMR monitoring.
3. Water Source Type	The type of source water that supplies a water system facility. Systems must report one of the following codes for each sampling location: SW = surface water (to be reported for water facilities that are served all or in part by a surface water source). GW = ground water (to be reported for water facilities that are served entirely by a ground water source). GU = ground water under the direct influence of surface water (to be reported for water facilities that are served all or in part by ground water under the direct influence of surface water).
4. Sampling Point Identification Code	An identification code established by the State, or at the State's discretion, by the PWS, unique within each applicable facility, for each applicable sampling location (*i.e.*, entry point to the distribution system or distribution system sample at maximum residence time). The same identification code must be used to represent the sampling location for all current and future UCMR monitoring.
5. Sampling Point Type Identification Code	An identification code corresponding to the location of the sampling point. EP = entry point to the distribution system. MR = distribution system sample at maximum residence time.
6. Disinfectant Residual Type	The type of disinfectant used to maintain a residual in the distribution system for each Screening Survey sampling point. To be reported by systems required to conduct Screening Survey monitoring. Systems must report using the following codes for each Screening Survey sampling location (*i.e.*, EP, MR): CL = chlorine

TABLE 1.—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data element	Definition
	CA = chloramine OT = all other types of disinfectant (*e.g.*, chlorine dioxide) ND = no disinfectant used.
7. Sample Collection Date	The date the sample is collected, reported as 4-digit year, 2-digit month, and 2-digit day.
8. Sample Identification Code	An alphanumeric value up to 30 characters assigned by the laboratory to uniquely identify containers, or groups of containers, containing water samples collected at the same sampling location for the same sampling date.
9. Contaminant	The unregulated contaminant for which the sample is being analyzed.
10. Analytical Method Code	The identification code of the analytical method used.
11. Sample Analysis Type	The type of sample collected and/or prepared, as well as the fortification level. Permitted values include: FS = field sample; sample collected and submitted for analysis under this rule. LFSM = laboratory fortified sample matrix; a UCMR field sample with a known amount of the contaminant of interest added. LFSMD = laboratory fortified sample matrix duplicate; duplicate of the laboratory fortified sample matrix. CF = concentration fortified; reported with sample analysis types LFSM and LFSMD, the concentration of a known contaminant added to a field sample.
12. Analytical Results—Sign	A value indicating whether the sample analysis result was: (<) ''less than'' means the contaminant was not detected, or was detected at a level below the Minimum Reporting Level. (=) ''equal to'' means the contaminant was detected at the level reported in ''Analytical Result—Value.''
13. Analytical Result—Value	The actual numeric value of the analysis for chemical and microbiological results for: field samples; laboratory fortified matrix samples; laboratory fortified sample matrix duplicates; and concentration fortified.
14. Laboratory Identification Code	The code, assigned by EPA, used to identify each laboratory. The code begins with the standard two-character State postal abbreviation; the remaining 5 numbers are unique to each laboratory in the State.
15. Sample Event Code	A code assigned by the PWS for each sample event. This will associate samples with the PWS monitoring plan to allow EPA to track compliance and completeness. Systems must assign the following codes: SE1 = represents samples collected to meet the UCMR monitoring requirement for the first sampling period (all source types). SE2 = represents samples collected to meet the UCMR monitoring requirement for the second sampling period (all source types). SE3 = represents samples collected to meet the UCMR monitoring requirement for the third sampling period (surface water and GWUDI sources only). SE4 = represents samples collected to meet the UCMR monitoring requirement for the fourth sampling period (surface water and GWUDI sources only).

Subpart E—[Amended]

4. Section 141.40 is revised to read as follows:

§ 141.40 Monitoring requirements for unregulated contaminants.

(a) *General applicability.* This section specifies the monitoring and quality control requirements that must be followed if you are a public water system (PWS) that is subject to the Unregulated Contaminant Monitoring Regulation (UCMR), as specified in paragraphs (a)(1) and (2) of this section. In addition, this section specifies the UCMR requirements for State and Tribal participation. For the purposes of this section, PWS ''population served'', ''State'', ''PWS Official'', and ''PWS Technical Contact'' are as defined in § 141.35(a). The determination of whether a PWS is required to monitor under this rule is based on the type of system (e.g., community water system, non-transient non-community water system, etc.); whether or not the system purchases all of its water from another system; and its population served as of June 30, 2005.

(1) *Applicability to transient non-community systems.* If you own or operate a transient non-community water system, you do not have to monitor that system for unregulated contaminants.

(2) *Applicability to community water systems and non-transient non-community water systems.*

(i) *Large systems.* If you own or operate a wholesale or retail PWS (other than a transient non-community system) that serves more than 10,000 people, and do not purchase your entire water supply as finished water from another PWS, you must monitor according to the specifications in this paragraph. If you believe that your applicability status is different than EPA has specified in the notification letter that you received, or if you are subject to UCMR requirements and you have not been notified by either EPA or your State, you must report to EPA, as specified in § 141.35(b)(1) and (2), respectively.

(A) Assessment Monitoring. You must monitor for the unregulated contaminants on List 1 of Table 1, Unregulated Contaminant Monitoring Regulation (UCMR) Contaminant List, in paragraph (a)(3) of this section. If you serve a population of more than 10,000 people, you are required to perform this monitoring regardless of whether or not you have been notified by the State or EPA.

(B) Screening Survey. You must monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1, as specified in paragraph (a)(3) of this section, if your system serves 10,001 to 100,000 people and you are notified by EPA or your State that you are part of the State Monitoring Plan for Screening Survey testing. If your system serves more than 100,000 people, you are required to conduct this Screening Survey testing regardless of whether or not you have been notified by the State or EPA.

(C) Pre-Screen Testing. You must monitor for the unregulated contaminants on List 3 of Table 1, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the Pre-Screen Testing.

(ii) *Small systems.* Small PWSs, as defined in this paragraph, will not be selected to monitor for any more than one of the three monitoring lists provided in Table 1, UCMR Contaminant List, in paragraph (a)(3) of this section. EPA will provide sample containers, provide pre-paid air bills for shipping the sampling materials, conduct the laboratory analysis, and report and review monitoring results for all small systems selected to conduct monitoring under paragraphs (a)(2)(ii)(A) through (C) of this section. If you own or operate a PWS (other than a transient system) that serves 10,000 or fewer people and do not purchase your entire water supply from another PWS, you must monitor as follows:

(A) Assessment Monitoring. You must monitor for the unregulated contaminants on List 1 of Table 1, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the State Monitoring Plan for Assessment Monitoring.

(B) Screening Survey. You must monitor for the unregulated contaminants on List 2 of Table 1, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the State Monitoring Plan for the Screening Survey.

(C) Pre-Screen Testing. You must monitor for the unregulated contaminants on List 3 of Table 1, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the State Monitoring plan for Pre-Screen Testing.

(3) *Analytes to be monitored.* Lists 1, 2, and 3 of unregulated contaminants are provided in the following table:

TABLE 1.—UCMR CONTAMINANT LIST

1—Contaminant	2—CAS registry number	3—Analytical methods [a]	4—Minimum reporting level [b]	5—Sampling location [c]	6—Period during which monitoring to be completed
LIST 1: ASSESSMENT MONITORING CHEMICAL CONTAMINANTS					
1. Dimethoate	60–51–5	EPA 527 [d]	0.71 µg/L	EPTDS	7/1/2007–6/31/2010.
2. Terbufos sulfone	56070–16–7	EPA 527 [d]	0.44 µg/L	EPTDS	7/1/2007–6/31/2010.
3. 2,2',4,4'-tetrabromodiphenyl ether (BDE–47).	5436–43–1	EPA 527 [d]	0.33 µg/L	EPTDS	7/1/2007–6/31/2010.
4. 2,2',4,4',5-pentabromodiphenyl ether (BDE–99).	60348–60–9	EPA 527 [d]	0.92 µg/L	EPTDS	7/1/2007–6/31/2010.
5. 2,2',4,4',5,5'-hexabromobiphenyl (245–HBB).	59080–40–9	EPA 527 [d]	0.72 µg/L	EPTDS	7/1/2007–6/31/2010.
6. 2,2',4,4',5,5'-hexabromodiphenyl ether (BDE–153).	68631–49–2	EPA 527 [d]	0.85 µg/L	EPTDS	7/1/2007–6/31/2010.
7. 2,2',4,4',6-pentabromodiphenyl ether (BDE–100).	189084–64–8	EPA 527 [d]	0.52 µg/L	EPTDS	7/1/2007–6/31/2010.
8. 1,3-dinitrobenzene	99–65–0	EPA 529 [e]	0.76 µg/L	EPTDS	7/1/2007–6/31/2010.
9. 2,4,6-trinitrotoluene (TNT).	118–96–7	EPA 529 [e]	0.78 µg/L	EPTDS	7/1/2007–6/31/2010.
10. Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX).	121–82–4	EPA 529 [e]	1.2 µg/L	EPTDS	7/1/2007–6/31/2010.
11. Perchlorate	14797–73–0	EPA 314.0 [f, g]	0.57 µg/L	EPTDS	7/1/2007–6/31/2010.
		EPA 314.1 [h]		.	
		EPA 331.0 [i]		.	
		EPA 332.0 [j]		.	
LIST 2: SCREENING SURVEY CHEMICAL CONTAMINANTS **Acetanilide Pesticide Degradation Products**					
1. Acetochlor ESA	187022–11–3	EPA 535 [k]	1.4 µg/L	EPTDS	7/1/2007–6/31/2009.
2. Acetochlor OA	184992–44–4	EPA 535 [k]	1.5 µg/L	EPTDS	7/1/2007–6/31/2009.
3. Alachlor ESA	142363–53–9	EPA 535 [k]	1.0 µg/L	EPTDS	7/1/2007–6/31/2009.
4. Alachlor OA	171262–17–2	EPA 535 [k]	1.6 µg/L	EPTDS	7/1/2007–6/31/2009.
5. Metolaclor ESA	171118–09–5	EPA 535 [k]	1.1 µg/L	EPTDS	7/1/2007–6/31/2009.
6. Metolachlor OA	152019–73–3	EPA 535 [k]	1.5 µg/L	EPTDS	7/1/2007–6/31/2009.
Acetanilide Pesticide Parent Compounds					
7. Acetochlor	34256–82–1	EPA [l]	2.0 µg/L	EPTDS	7/1/2007–6/31/2009.
8. Alachlor	15972–60–8	EPA [l]	1.6 µg/L	EPTDS	7/1/2007–6/31/2009.
9. Metolachlor	51218–45–2	EPA [l]	1.0 µg/L	EPTDS	7/1/2007–6/31/2009.
Nitrosamines					
10. N-nitroso-diethylamine (NDEA).	55–18–5	EPA 521 [m]	0.0046 µg/L	DSMRT and EPTDS	7/1/2007–6/31/2009.

TABLE 1.—UCMR CONTAMINANT LIST—Continued

1—Contaminant	2—CAS registry number	3—Analytical methods [a]	4—Minimum reporting level [b]	5—Sampling location [c]	6—Period during which monitoring to be completed
11. N-nitroso-dimethylamine (NDMA).	62–75–9	EPA 521 [m]	0.0024 µg/L	DSMRT and EPTDS	7/1/2007–6/31/2009.
12. N-nitroso-di-n-butylamine (NDBA).	924–16–3	EPA 521 [m]	0.0035 µg/L	DSMRT and EPTDS	7/1/2007–6/31/2009.
13. N-nitroso-di-n-propylamine (NDPA).	621–64–7	EPA 521 [m]	0.0072 µg/L	DSMRT amd EPTDS	7/1/2007– 6/31/2009.
14. N-nitroso-methylethylamine (NMEA).	10595–95–6	EPA 521 [m]	0.0034 µg/L	DSMRT and EPTDS	7/1/2007–6/31/2009.
15. N-nitroso-pyrrolidine (NPYR).	930–55–2	EPA 521 [m]	0.0022 µg/L	DSMRT and EPTDS	7/1/2007–6/31/2009.
LIST 3: PRE-SCREEN TESTING TO BE SAMPLED AFTER NOTICE OF ANALYTICAL METHODS AVAILABILITY					
1. Reserved [n]	Reserved [n]	Reserved [n]	Reserved [n]	Reserved [n]	Reserved. [n]

Column headings are:
1—Contaminant: the name of the contaminant to be analyzed.
2—CAS (Chemical Abstract Service) Registry Number or Identification Number: a unique number identifying the chemical contaminants.
3—Analytical Methods: method numbers identifying the methods that must be used to test the contaminants.
4—Minimum Reporting Level: the value and unit of measure at or above which the concentration of the contaminant must be measured using the approved analytical methods.
5—Sampling Location: the locations within a PWS at which samples must be collected.
6—Period During Which Monitoring to Be Completed: the years during which the sampling and testing are to occur for the indicated contaminant.

The analytical procedures shall be performed in accordance with the documents associated with each method (per the following footnotes). The incorporation by reference of the following documents listed in footnotes d-m was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Information on how to obtain these documents can be provided by the Safe Drinking Water Hotline at (800) 426–4791. Documents may be inspected at EPA's Drinking Water Docket, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington, DC 20460, Telephone: (202) 566–2426; or at the National Arcives and Records Administration (NARA). For information on availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations_html.*

[a] The version of the EPA methods which you must follow for this Regulation are listed in d-m as follows.

[b] The Minimum Reporting Level (MRL) was established by EPA by adding the mean of the Lowest Concentration Minimum Reporting Levels (LCMRL) determined according to the procedure detailed in ''Statistical Protocol for the Determination of The Single-Laboratory Lowest Concentration Minimum Reporting Level (LCMRL) and Validation of the Minimum Reporting Level (MRL)'' by the primary and secondary laboratories conducting the development and validation of the analytical method to three times the difference of the LCMRLs. If LCMRL data from three or more laboratories were available, the MRL was established by EPA by adding three times the standard deviation of the LCMRLs to the mean of the LCMRLs. Note that EPA Methods 314.0 and 525.2 were developed prior to UCMR 2, hence the LCMRLs were not determined for analytes determined by these methods.

[c] Sampling must occur at entry points to the distribution system (EPTDSs) after treatment is applied that represent each non-emergency water source in routine use over the 12-month period of monitoring. See 40 CFR 141.35(c)(3) for an explanation of the requirements related to use of representative EPTDSs. Sampling for nitrosamines on List 2 must also occur at the disinfection byproduct distribution system maximum residence time (DSMRT) sampling locations as defined in 40 CFR 141.132(b)(1)(i) and at EPTDSs sampling locations. If a treatment plant/water source is not subject to the sampling required in 40 CFR 141.132(b)(1), then the samples for nitrosamines must be collected only at the EPTDS location.

EPA Method 527 [d] ''Determination of Selected Pesticides and Flame Retardants in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)'' is available at *http://www.epa.gov/safewater/methods/sourcalt.html.*

EPA Method 529 [e] ''Determination of Explosives and Related Compounds in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS)'' is available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

EPA Method 314.0 [f] ''Determination of Perchlorate in Drinking Water Using Ion Chromatography'' is available at *http://www.epa.gov/safewater/methods/sourcalt.html.*

[g] All perchlorate samples must be collected using the sterile technique required in Methods 314.1, 331.0, or 332.0.

[h] EPA Method 314.1 ''Determination of Perchlorate in Drinking Water Using Inline Column Concentration/Matrix Elimination Ion Chromatography with Suppressed Conductivity Detection'' is available at *http://www.epa.gov/safewater/methods/sourcalt.html.*

[i] EPA Method 331.0 ''Determination of Perchlorate in Drinking Water by Liquid Chromatography Electrospray Ionization Mass Spectrometry'' is available at *http://www.epa.gov/safewater/methods/sourcalt.html.*

[j] EPA Method 332.0 ''Determination of Perchlorate in Drinking Water Using Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry'' is available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

[k] EPA Method 535, Revision 1.1'' Measurement of Chloroacetanilide and Other Acetamide Herbicide Degradates in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)'' is available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

[l] EPA Method 525.2 ''Determination of Organic Compounds in Drinking Water by Liquid-Solid Extraction and Capillary Column Gas Chromatography/Mass Spectrometry'' is available at *http://www.NEMI.gov.*

[m] EPA Method 521 ''EPA Method 521: Determination of Nitrosamines in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography with Large Volume Injection and Chemical Ionization Tandem Mass Spectrometry (MS/MS)'' is available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

[n] To be determined at a later time.

(4) *Sampling requirements*—

(i) *Large systems.* If you serve more than 10,000 people and meet the UCMR applicability criteria specified in paragraph (a)(2)(i) of this section, you must comply with the requirements specified in paragraphs (a)(4)(i)(A) through (I) of this section. Your samples must be collected according to the schedule that you are assigned by EPA or your State, or the schedule that you revised using EPA's electronic data reporting system on or before [DATE 210 DAYS AFTER PUBLICATION OF THE FINAL RULE]. Your schedule must

follow both the timing and frequency of monitoring specified in Tables 1 and 2 of this section.

(A) Monitoring period. You must collect the samples in one continuous 12-month period for List 1 Assessment Monitoring, and, if applicable, for List 2 Screening Survey, or List 3 Pre-Screen Testing, during the time frame indicated in column 6 of Table 1, in paragraph (a)(3) of this section. As specified in § 141.35(c)(5), you must contact EPA if you believe you cannot conduct monitoring according to your schedule.

(B) Frequency. You must collect the samples within the time frame and according to the frequency specified by contaminant type and water source type for each sampling location, as specified in Table 2, in paragraph (a)(4)(i)(B).

TABLE 2.—MONITORING FREQUENCY BY CONTAMINANT AND WATER SOURCE TYPES

Contaminant type	Water source type	Time frame (months)	Frequency
Chemical	Surface water or ground water under the direct influence of surface water (GWUDI) (includes all sampling locations for which some or all of the water comes from a surface water or GWUDI source).	12	You must monitor for 4 consecutive quarters. Sample events must occur 3 months apart.
	Ground water	12	You must monitor twice in a consecutive 12-month period. Sample events must occur 6 months apart.

(C) Location. You must collect samples for each List 1 Assessment Monitoring contaminant, and, if applicable, for each List 2 Screening Survey, or List 3 Pre-Screen Testing contaminant, as specified in Table 1, in paragraph (a)(3) of this section; samples must be collected at each sample point that is specified in column 5 of that table. If you are a ground water system with multiple EPTDSs, and you request and receive approval from EPA or the State for sampling at representative EPTDS(s), as specified in § 141.35(c)(3), you must collect your samples from the approved representative sampling location(s). Systems conducting Screening Survey monitoring must also sample for nitrosamines at the disinfection byproduct distribution system maximum residence time (DSMRT) sampling location(s) if they are subject to sampling requirements in § 141.132(b)(1).

(D) Sampling instructions. For each List 1 Assessment Monitoring contaminant, and, if applicable, for each List 2 Screening Survey, or List 3 Pre-Screen Testing contaminant, you must follow the sampling procedure for the method specified in column 3 of Table 1, in paragraph (a)(3) of this section. In addition, you must not composite (that is, combine, mix, or blend) the samples; you must collect, preserve, and test each sample separately. If you are using EPA Method 314.0 for analysis of perchlorate, you must collect the samples using the sterile techniques that are described in any 1 of the other 3 perchlorate methods, as specified in Table 1, in paragraph (a)(3) of this section.

(E) Sample collection and shipping time. If you must ship the samples for testing, you must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory. You should not collect samples on Friday, Saturday, or Sunday because sampling on these days may not allow samples to be shipped and received at the laboratory at the required temperature, unless you have made special arrangements with your laboratory to receive the samples.

(F) Analytical methods. For each contaminant, you must use the analytical methods for List 1, and, if applicable, for List 2, that are specified in column 3 of Table 1, in paragraph (a)(3) of this section; report values at or above the minimum reporting levels for List 1, and, if applicable, for List 2 Screening Survey, or List 3 Pre-Screen Testing, that are specified in column 4 of Table 1, in paragraph (a)(3) of this section; and conduct the quality control procedures specified in paragraph (a)(5) of this section.

(G) Laboratory errors or sampling deviations. If an error occurs either at the laboratory which precludes its reporting of valid data, or in sampling for a listed contaminant, you must resample within 14 days of observing the occurrence of the error using the procedures specified for the method. (This resampling is not for confirmation sampling, but to correct the sampling or laboratory error.)

(H) Analysis. For the List 1 contaminants, and, if applicable, List 2 Screening Survey, or List 3 Pre-Screen Testing contaminants, identified in Table 1, paragraph (a)(3) of this section, you must arrange for testing by a laboratory that has been approved by EPA according to requirements in paragraph (a)(5)(ii) of this section.

(I) Review and reporting of results. After you have received the laboratory results, you must review, approve, and submit the system information, and sample collection data and test results. You must report the results as provided in § 141.35(c)(6).

(ii) *Small systems.* If you serve 10,000 or fewer people and are notified that you are part of the State Monitoring Plan for Assessment Monitoring, Screening Survey or Pre-Screen monitoring, you must comply with the requirements specified in paragraphs (a)(4)(i)(A) through (H) of this section. If EPA or the State informs you that they will be collecting your UCMR samples, you must assist them in identifying the appropriate sampling locations and in taking the samples.

(A) Monitoring period and frequency. You must collect samples at the times specified for you by the State or EPA. Your schedule must follow both the timing of monitoring specified in Table 1, List 1, and, if applicable, List 2, and the frequency of monitoring in Table 2 of this section.

(B) Location. You must collect samples at the locations specified for you by the State or EPA.

(C) Sample kits. You must store and maintain the sample collection kits sent to you by the UCMR Sampling Coordinator in accordance with the kit's instructions. The sample kit will include all necessary containers, packing materials and cold packs, instructions for collecting the sample and sample treatment (such as dechlorination or preservation), report forms for each sample, contact name and telephone number for the laboratory, and a prepaid return shipping docket and return address label. If any of the materials listed in the kit's instructions are not included in the kit or arrive damaged, you must notify

the UCMR Sampling Coordinator who sent you the sample collection kits.

(D) Sampling instructions. You must comply with the instructions sent to you by the State or EPA concerning the use of containers, collection (how to fill the sample bottle), dechlorination and/or preservation, and sealing and preparation of sample and shipping containers for shipment. You must not composite (that is, combine, mix, or blend) the samples. You also must collect, preserve, and test each sample separately. You must also comply with the instructions sent to you by the UCMR Sampling Coordinator concerning the handling of sample containers for specific contaminants.

(E) Sampling deviations. If you do not collect a sample according to the instructions provided to you for a listed contaminant, you must report the deviation within 7 days of the scheduled monitoring on the sample reporting form, as specified in § 141.35(d)(2). A copy of the form must be sent to the laboratory with the samples, and to the UCMR Sampling Coordinator. You must resample following instructions that you will be sent from the UCMR Sampling Coordinator or State.

(F) Duplicate samples. EPA will select systems in the State Monitoring Plan that must collect duplicate samples for quality control. If your system is selected, you will receive two sample kits for an individual sampling location that you must use. You must use the same sampling protocols for both sets of samples, following the instructions in the duplicate sample kit.

(G) Sampling forms. You must completely fill out each of the sampling forms and bottles sent to you by the UCMR Sampling Coordinator, including data elements listed in § 141.35(e) for each sample. If you are conducting Assessment Monitoring, you must include elements 1 through 5, and 7; and if you are conducting Screening Survey, you must include elements 1 through 7. You must sign and date the sampling forms.

(H) Sample collection and shipping. You must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory. You should not collect samples on Friday, Saturday, or Sunday because sampling on these days may not allow samples to be shipped and received at the laboratory at the required temperature unless you have made special arrangements with EPA for the laboratory to receive the samples. Once you have collected the samples and completely filled in the sampling forms, you must send the samples and the sampling forms to the laboratory designated on the air bill.

(5) *Quality control requirements.* If your system serves more than 10,000 people, you must ensure that the quality control requirements listed below are met during your sampling procedures and by the laboratory conducting your analyses. You must also ensure that all method quality control procedures and all UCMR quality control procedures are followed.

(i) *Sample collection/preservation.* You must follow the sample collection and preservation requirements for the specified method for each of the contaminants in Table 1, in paragraph (a)(3) of this section. If you are using EPA Method 314.0 for analysis of perchlorate, you must collect the samples using the sterile techniques that are described in any 1 of the other 3 perchlorate methods, as specified in Table 1, in paragraph (a)(3) of this section. These requirements specify sample containers, collection, dechlorination, preservation, storage, sample holding time, and extract storage and/or holding time that you must assure that the laboratory follow.

(ii) *Laboratory approval for Lists 1 and 2.* To be approved to conduct UCMR testing, the laboratory must be certified under § 141.28 for one or more compliance analyses; demonstrate for each analytical method it plans to use for UCMR testing that it can meet the Initial Demonstration of Capability (IDC) requirements specified in column 3 of Table 1, in paragraph (a)(3) of this section; and successfully participate in the UCMR Proficiency Testing (PT) Program administered by EPA for each analytical method it plans to use for UCMR testing. UCMR laboratory approval decisions will be granted on an individual method basis for the methods listed in column 3 of Table 1 in paragraph (a)(3) of this section for List 1, List 2, and List 3 contaminants. Laboratory approval is contingent upon the capability of the laboratory to post monitoring data to the EPA electronic data reporting system. To participate in the UCMR Laboratory Approval Program, the laboratory must complete and submit the necessary registration forms by [INSERT DATE 90 DAYS AFTER PUBLICATION OF THE FINAL RULE]. Correspondence must be addressed to: UCMR 2 Laboratory Approval Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or e-mailed to EPA at *UCMR_Sampling_Coordinator@epa.gov*.

(iii) *Minimum Reporting Level.* The Minimum Reporting Level (MRL) is the lowest analyte concentration for which future recovery is predicted to fall, with high confidence (99%), between 50% and 150% recovery.

(A) Validation of laboratory performance. Your laboratory must be capable of quantifying each contaminant listed in Table 1, at or below the MRL specified in column 4 of Table 1, in paragraph (a)(3) of this section. You must ensure that the laboratory completes and has on file and available for your inspection, records of two distinct procedures. First, your laboratory must have conducted an IDC involving replicate analyses at or below the MRL as described in this paragraph. Second, for each day that UCMR analyses are conducted by your laboratory, a validation of its ability to quantify each contaminant, at or below the MRL specified in column 4 of Table 1, in paragraph (a)(3) of this section, following the procedure listed in paragraph (a)(5)(iii)(B) of this section, must be performed. The procedure for validation of laboratory performance at or below the MRL is as follows:

(1) All laboratories using EPA drinking water methods under UCMR must demonstrate that they are capable of meeting data quality objectives (DQOs) at or below the MRL listed in Table 1, column 4, in paragraph (a)(3) of this section.

(2) The MRL, or any concentration below the MRL, at which performance is being evaluated, must be contained within the range of calibration. The calibration curve regression model and the range of calibration levels that is used in these performance validation steps must be used in all routine sample analyses used to comply with this regulation. Only straight line or quadratic regression models are allowed. The use of either weighted or unweighted models is permitted. The use of cubic regression models are not permitted.

(3) Replicate analyses of at least seven (7) fortified samples in reagent water must be performed at or below the MRL for each analyte, and must be processed through the entire method procedure (*i.e.*, including extraction, where applicable and with all preservatives).

(4) A prediction interval of results (PIR), which is based on the estimated arithmetic mean of analytical results and the estimated sample standard deviation of measurement results, must be determined by Equation 1:

$$PIR = Mean \pm s \times t_{(df,1-\alpha/2)} \times \sqrt{1+\frac{1}{n}} \qquad \text{Equation 1}$$

Where:

t is the Student's t value with df degrees of freedom and confidence level (1-*a*),

s is the sample standard deviation of n replicate samples fortified at the MRL,

n is the number of replicates.

(5) The values needed to calculate the PIR using Equation 1 are: number of replicates (n); Student's t value with a two-sided 99% confidence level for n number of replicates; the average (mean) of at least seven replicates; and the sample standard deviation. Factor 1 is referred to as the Half Range PIR (HR_{PIR}). For a certain number of replicates and for a certain confidence level in Student's t, this factor is constant, and can be tabulated according to replicate number and confidence level for the Student's t. Table 3 in this paragraph lists the constant factor (C) for replicate sample numbers 7 through 10 with a confidence level of 99% for Student's t.

$$T\ s \times t_{(df,1-\alpha/2)} \times \sqrt{1+\frac{1}{n}} \qquad \text{Factor 1}$$

(6) The HR_{PIR} is calculated by Equation 2:

$$HR_{PIR} = s \times C \qquad \text{Equation 2}$$

(7) The PIR is calculated by Equation 3:

$$PIR = Mean \pm HR_{PIR} \qquad \text{Equation 3}$$

TABLE 3.—THE CONSTANT FACTOR (C) TO BE MULTIPLIED BY THE STANDARD DEVIATION TO DETERMINE THE HALF RANGE INTERVAL OF THE PIR

[Student's *t* 99% confidence level][1]

Replicates	Degrees of freedom	Constant factor (C) to be multiplied by the standard deviation
7	6	3.963
8	7	3.711
9	8	3.536
10	9	3.409

[1] The critical t-value for a two-sided 99% confidence interval is equivalent to the critical t-value for a one-sided 99.5% confidence interval, due to the symmetry of the t-distribution. PIR = Prediction Interval of Results.

(8) The lower and upper result limits of the PIR must be converted to percent recovery of the concentration being tested. To pass criteria at a certain level, the PIR lower recovery limits cannot be lower than the lower recovery limits of the quality control (QC) interval (50%), and the PIR upper recovery limits cannot be greater than the upper recovery limits of the QC interval (150%). When the PIR recovery limits fall outside of either bound of the QC interval of recovery (higher than 150% or less than 50%), laboratory performance is not validated at the concentration evaluated. If the PIR limits are contained within both bounds of the QC interval, laboratory performance is validated for that analyte.

(B) Quality control requirements for validation of laboratory performance at or below the MRL.

(1) You must ensure that the calibration curve regression model and that the range of calibration levels that are used in these performance validation steps are used in future routine sample analysis. Only straight line or quadratic regression models are allowed.

(2) You must ensure, once your laboratory has performed an IDC as specified in each analytical method (demonstrating that DQOs are met at or below an MRL), that a daily performance check is performed for each analyte and method. A single sample, spiked at or below the MRL for each analyte, must be processed through the entire method procedure. The measured concentration for each analyte must be converted to a percent recovery, and if the recovery is within 50%–150% (inclusive), the daily performance of the laboratory has been validated. The results for any analyte for which 50%–150% recovery cannot be demonstrated during the daily check are not valid. Laboratories may elect to re-run the daily performance check sample if the performance for any analyte or analytes cannot be validated. If performance is validated for these analytes, then the laboratory performance is considered validated. Alternatively, the laboratory may re-calibrate and repeat the performance validation process for all analytes. Laboratories performing perchlorate analyses using EPA Method 314.0 must, in addition to the quality control specified in that method, successfully monitor the Laboratory Synthetic Sample Matrix Blank and the MRL Laboratory Fortified Synthetic Sample Matrix, as specified in Section 9.3.2 and 9.3.4 of EPA Method 314.1, prior to analysis of samples. The MRL Laboratory Fortified Synthetic Sample Matrix is intended as a daily MRL check and only must be run once per analysis batch.

(iv) *Laboratory fortified sample matrix and laboratory fortified sample matrix duplicate.* You must ensure that your laboratory prepares and analyzes the Laboratory Fortified Sample Matrix (LFSM) sample for accuracy and Laboratory Fortified Sample Matrix Duplicate (LFSMD) samples for precision to determine method accuracy and precision for all contaminants in Table 1, in paragraph (a)(3) of this section. LFSM/LFSMD samples must be prepared using a sample collected and analyzed in accordance with UCMR 2 requirements and analyzed at a

frequency of 5% (or 1 LFSM/LFSMD set per every 20 samples) or with each sample batch, whichever is more frequent. In addition, the LFSM/LFSMD fortification concentrations must be alternated between a low-level fortification and mid-level fortification approximately 50% of the time. (For example: a set of 40 samples will require preparation and analysis of 2 LFSM/LFSMD sets. The first set must be fortified at either the low-level or mid-level, and the second set must be fortified with the other standard, either the low-level or mid-level, whichever was not used for the initial LFSM/LFSMD set.) The low-level LFSM/LFSMD fortification concentration must be within ±20% of the MRL for each contaminant (*e.g.*, for an MRL of 1.0 µg/L the acceptable fortification levels must be between 0.80 µg/L and 1.2 µg/L). The mid-level LFSM/LFSMD fortification concentration must be within ±20% of the mid-level calibration standard for each contaminant, and should represent, where possible and where the laboratory has data from previously analyzed samples, an approximate average concentration observed in previous analyses of that analyte. There are no acceptance criteria specified for LFSM/LFSMD analyses. All LFSM/LFSMD data are to be reported.

(v) *Detection Confirmation.* Results greater than or equal to the MRLs specified in column 4 of Table 1 in paragraph (a)(3) of this section, that are obtained using Methods 314.0 or 314.1, must be confirmed before being reported. Results using these methods must be confirmed by Methods 331.0 or 332.0 or by second column confirmation as detailed in Method 314.1. If confirmation is being performed using the second column specified in Method 314.1, the laboratory must use one of the following confirming techniques: perform single point calibration of the second chromatographic column for confirmation purposes only as long as the calibration standard is at a concentration within ±50% of the concentration determined by the initial analysis; or perform a three (3) point calibration with single point daily calibration verification of the second chromatographic column regardless of whether that verification standard concentration is within ±50% of sample response. However, this calibration must bracket the concentration of the contaminant observed. The concentration obtained for the primary column must be reported; if the concentration observed on the primary column is within 2 times the MRL and the quantitation of both columns is within ±50%, or if the concentration observed on the primary column is greater than 2 times the MRL and the quantitation of both columns is within ±30%. If the quantitation obtained from both columns is not within ±50% and the concentration observed on the primary column is within 2 times the MRL, or if the quantitation obtained from both columns is not within ±30% and the concentration observed on the primary column greater than 2 times the MRL, the result is to be reported as ''not reported due to matrix interference,'' as specified in Table 1, in § 141.35(e). If confirmation is being performed using either Method 331.0 or 332.0, then the laboratory must report the Method 331.0 or 332.0 result.

(vi) *Method defined quality control.* You must ensure that your laboratory performs Laboratory Fortified Blanks and Laboratory Performance Checks, as appropriate to the method's requirements, for those methods listed in Table 1, column 3, in paragraph (a)(3) of this section. Each method specifies acceptance criteria for these QC checks.

(vii) *Reporting.* You must ensure that the laboratory you use reports the analytical results and other data, with the required data listed in Table 1, in § 141.35(e). You must require your laboratory to submit these data electronically to the State and EPA using EPA's electronic data reporting system (*http://www.epa.gov/safewater/ucmr/ucmr2/reporting.html*) within 120 days from the sample collection date. You have 60 days from when the laboratory posts the data to then review, approve, and submit the data to the State and EPA, via EPA's electronic data reporting system. If you do not electronically approve and submit the laboratory data to EPA within 60 days of the laboratory's posting to EPA's electronic reporting system, the data will be considered approved and final for EPA review.

(6) *Violation of this rule—*

(i) *Monitoring violations.* Any failure to monitor in accordance with § 141.40(a)(3)–(5) is a monitoring violation.

(ii) *Reporting violations.* Any failure to report in accordance with § 141.35 is a reporting violation.

(b) *Requirements for State and Tribal participation—*

(1) *Governors' petition for additional contaminants.* The Safe Drinking Water Act allows Governors of seven (7) or more States to petition the EPA Administrator to add one or more contaminants to the UCMR Contaminant List in paragraph (a)(3) of this section. The petition must clearly identify the reason(s) for adding the contaminant(s) to the monitoring list, including the potential risk to public health, particularly any information that might be available regarding disproportional risks to the health and safety of children, the expected occurrence documented by any available data, any analytical methods known or proposed to be used to test for the contaminant(s), and any other information that could assist the Administrator in determining which contaminants present the greatest public health concern and should, therefore, be included on the UCMR Contaminant List in paragraph (a)(3) of this section.

(2) *State-wide waivers.* You can waive monitoring requirements only with EPA approval and under very limited conditions. Conditions and procedures for obtaining a waiver are as follows:

(i) *Application.* You may apply to EPA for a State-wide waiver from the unregulated contaminant monitoring requirements for PWSs serving more than 10,000 people. To apply for such a waiver, you must submit an application to EPA that includes the following information: the list of contaminants on the UCMR Contaminant List for which you request a waiver, along with documentation for each contaminant in your request demonstrating that the contaminants or their parent compounds do not occur naturally in your State, and certifying that during the past 15 years they have not been used, applied, stored, disposed of, released, or detected in the source waters or distribution systems in your State.

(ii) *Approval.* EPA will review your application and notify you whether it accepts or rejects your request. You must receive written approval from EPA before issuing a State-wide waiver.

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