The Analysis of Occurrence Data from the First Unregulated Contaminant Monitoring Regulation (UCMR 1) in Support of Regulatory Determinations for the Second Drinking Water Contaminant Candidate List (CCL 2)

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Disclaimer

This document is designed to provide technical background information for the regulatory determinations being made on the second drinking water Contaminant Candidate List (CCL 2).

This document is not a regulation itself, and it does not substitute for the Safe Drinking Water Act (SDWA) or the Environmental Protection Agency's (EPA's) regulations. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

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Executive Summary

Contaminant occurrence data collected under the First Unregulated Contaminant Monitoring Regulation (UCMR 1) are nationally representative public water system monitoring results. This UCMR 1 monitoring was conducted for select unregulated contaminants in drinking water under the authority of Safe Drinking Water Act. The UCMR 1 program specified that a statistically representative group of small public water systems (serving between 25 and 10,000 persons) and all large public water systems (serving more than 10,000 persons) were required to conduct monitoring and submit drinking water sample results for a list of specified unregulated contaminants from the second Contaminant Candidate List (CCL 2).

This report presents the United States Environmental Protection Agency (EPA) analysis of the national occurrence of unregulated contaminants on the CCL 2 that were monitored in public water systems (PWSs) under the UCMR 1.[1] Detailed occurrence analyses are presented for ten contaminants evaluated during EPA's CCL 2 regulatory determinations: the mono- and di-acid degradates of dimethyl tetrachloroterephthalate (DCPA, also known as dacthal), 1,3-dichloropropene,[2] 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene (DDE), 2,4-dinitrotoluene, 2,6-dinitrotoluene, s-ethyl dipropylthiocarbamate (EPTC), fonofos, methyl tertiary butyl ether (MTBE), and terbacil. Less detailed occurrence summaries are presented for several other UCMR 1 contaminants as well. This report also describes the sources, quality, management, and characteristics of the UCMR 1 data.

The UCMR 1 sampling was conducted from May 1, 2000 to October 25, 2005, with almost 95% of monitoring conducted during the formal UCMR 1 sampling period of January 2001 to December 2003. A very high portion of eligible PWSs participated in the UCMR 1 monitoring, and collectively the systems submitted monitoring data of high quality. The data have been collected from PWSs in all fifty States and six additional primacy entities. UCMR 1 monitoring data were collected and submitted by 797 (99.6%) of the 800 small systems selected for the small system representative sample and by 3,090 (99.7%) of the 3,100 large systems defined as eligible for the UCMR 1 large system census. Approximately 99% of submitted monitoring data met the data quality acceptance criteria established for the UCMR 1 program. These data quality measures exceeded the UCMR 1 Data Quality Objectives (DQOs) that required a small systems participation rate of at least 83.275%, and required that at least 90% of all submitted data meet the established data acceptance criteria.

Each small and large PWS participating in UCMR 1 monitoring conducted one year of monitoring, with surface water systems sampling four times per year and ground water systems sampling two times per year. The monitoring periods for the small and large PWSs were staggered over the three primary years (2001-2003) of UCMR 1 monitoring. Approximately one-third of all UCMR 1 small systems throughout the country conducted monitoring in each of the three years of UCMR 1 monitoring. The monitoring schedules for these systems were staggered to include monitoring in every month and every season around the country. Large

[1] The sample occurrence data discussed and used in this report reflect UCMR 1 analytical samples submitted and quality-checked as of March 2006 and posted on EPA's NCOD in October 2007.

[2] 1,3-Dichloropropene was not officially monitored under UCMR 1, but was as added as an extra contaminant for monitoring by small systems conducting List 1 monitoring.

systems could conduct their one year of monitoring anytime during the UCMR 1 period of 2001 to 2003. Like small systems, their monitoring schedules were spread throughout the year and were to include one sample during what was designated as the season most vulnerable to contaminant occurrence. In this way, the UCMR results reflect multiple seasons and multiple years of climatic conditions throughout the country and are not directly affected (or biased) by weather conditions of a single season, year, or geographic region.

Occurrence analyses of the UCMR 1 data are conducted using a two-stage analytical approach. In Stage 1, the data are first reviewed, quality-checked, and characterized. They are then analyzed to generate simple, clear non-parametric estimates of contaminant occurrence. The Stage 1 analysis, based on maximum sample values, is inherently conservative; it is designed not to underestimate occurrence in the protection of public health. Simple counts are made of the number of systems, and populations served by those systems, with at least one result above a specified concentration threshold. Any contaminant found to have significant occurrence at or near health reference level concentrations based on the Stage 1 analysis and that have health effects of a chronic nature (i.e., acute exposure is not a concern) can additionally be analyzed using the Stage 2 analysis. In Stage 2, statistical modeling is used to generate national probability estimates of contaminant occurrence based on estimated annual (or longer-term) mean concentrations of contaminants along with statistical measures of uncertainty and error. Stage 2 provides occurrence analyses that are less conservative than the Stage 1 analysis and as noted earlier, may be more appropriate for assessing contaminants with chronic health endpoints. Because none of the UCMR 1 contaminants discussed in this document (with concerns about chronic exposure as opposed to acute) had significant levels of contaminant occurrence at or near the health reference levels of concern based on the Stage 1 analyses, Stage 2 analyses were not warranted for any of the UCMR contaminants. However, to illustrate the complete two-stage analytical approach, a Stage 2 analysis is conducted for the DCPA degradates.

Stage 1 assessments of occurrence are presented in several ways for each contaminant to characterize different aspects of occurrence. For each contaminant, occurrence statistics presented include the number and percentage of samples with detections, which are values above the minimum reporting level (MRL). Detections are summarized in aggregate by calculating and presenting the minimum, median, and 99th percentile values of detections for each contaminant. At the system level, the number and percent of systems with at least one detection at or above the MRL and the number and percent of systems with at least two detections at or above the MRL are presented. For contaminants with health reference levels (HRLs), similar types of occurrence assessments are presented relative to the concentration values of the HRLs.

Occurrence statistics are presented for different categories of systems so that occurrence can be assessed based on system characteristics such as source water type (ground water or surface water) or system size (population served). Although the statistical sample of 800 small systems is too small to support a statistically-rigorous State-level occurrence analysis, summary tables of all UCMR 1 contaminant monitoring results are presented for each State, Territory, and Tribe to provide a complete record of data collected and monitoring results for each State. UCMR 1 occurrence data from the large systems (representing a census of large systems) do support State occurrence analyses that are representative (statistically valid) at the State level.

The UCMR 1 monitoring found no detections for five contaminants considered during CCL 2 regulatory determinations: 1,3-dichloropropene, 2,6-dinitrotoluene, EPTC, fonofos, and terbacil. Detections were found and reported for five other UCMR 1 contaminants considered during CCL 2 regulatory determinations: the DCPA mono- and di-acid degradates (monitored and reported in aggregate), DDE, 2,4-dinitrotoluene, and MTBE. The occurrence of these five contaminants with detections is summarized as follows:

- For the DCPA degradates (monitored in aggregate), a total of 33,910 samples were collected by small and large PWSs; 776 detections were found, resulting in an overall sample detection rate of 2.29%. The DCPA degradates were detected at or above the MRL of 1 µg/L in 17 small systems (2.1%) and 160 large systems (5.2%). The maximum concentration from all (small and large) PWSs sampling was 190 µg/L. The average value among detections was 3.48 µg/L, and the median value was 2.00 µg/L. These DCPA degradate detections were found in PWSs in 24 States and the Territory of Guam. PWSs with detections were found in four general regions: California and the western Rocky Mountain States, the Southeast, the Northeast, and the upper Midwest. The proportion of ground water systems with DCPA degradate detections was more than two times greater than that for surface water systems, regardless of system size.

  Extrapolating the small system findings (17 PWSs with detections) nationally, approximately 689 small systems, serving approximately 1.1 million people, are estimated to have at least one sample detection (i.e., greater than the MRL) of the DCPA degradates. The 160 large PWSs with detections serve 11.3 million people. Combining the national extrapolation of the small system results with the large system results, approximately 849 small and large public water systems, serving 12.4 million people nationally, are estimated to have at least one sample detection of DCPA degradates. Although occurrence is relatively widespread, the DCPA degradate concentrations found are consistently low. Only a single small PWS had any detection greater than the DCPA degradate HRL of 70 µg/L, and no other small PWS detected concentrations greater than ½ HRL. Extrapolating the small system findings, an estimated 373 small systems, serving approximately 113,000 people, are estimated to have detectable levels of the DCPA degradates above the HRL of 70 µg/L. The census of large systems conducting UCMR 1 found no detections of DCPA degradates greater than 70 µg/L. One large PWS had a detection of the DCPA degradates greater than ½ the HRL.

- For DDE, a total of 33,797 samples were collected. DDE was detected at or above the MRL of 0.8 µg/L in only one large ground water system at a level of 3 µg/L. No DDE detections were found at any of the small systems conducting UCMR 1 sampling. The single detection was greater than the DDE HRL of 0.2 µg/L. (The MRL for DDE was greater than its HRL. However, the MRL is within the 10^{-4} to the 10^{-6} cancer risk range, which EPA considers an acceptable range for occurrence analysis of carcinogens.)

- For 2,4-dinitrotoluene, a total of 33,764 samples were collected. 2,4-Dinitrotoluene was detected above the MRL of 2 µg/L in only one large system, a surface water system, at a level of 333 µg/L. No detections were found at any of the small systems conducting UCMR 1 sampling. The single detection was greater than the 2,4-dinitrotoluene HRL of 0.05 µg/L. (The MRL for 2,4-dinitrotoluene was greater than its HRL. However, the

MRL is within the 10^{-4} to the 10^{-6} cancer risk range, which EPA considers an acceptable range for occurrence analysis of carcinogens.)

- For MTBE, a total of 33,768 samples were collected by small and large PWSs; 26 detections were found, resulting in an overall sample detection rate of 0.08%. MTBE was detected at or above the MRL of 5 µg/L in 3 small systems (0.4%) and 16 large systems (0.5%). The maximum concentration of MTBE for all (small and large) systems was 49 µg/L. The average value among detections was 15.2 µg/L, and the median value was 9.2 µg/L. No HRL has yet been established for MTBE. Detections were found in public water systems in 14 States. No distinct geographic trend in occurrence is apparent. MTBE was detected in large ground water and surface water systems, but was more prevalent in the ground water systems. All small system detections occurred in ground water systems.

  Extrapolating the small system findings (3 PWSs with detections), an estimated 149 small systems, serving approximately 147,000 people, are estimated to have at least one sample detection of MTBE. The 16 large PWSs with MTBE analytical detections serve 749,000 people. Combining the national extrapolation of the small system findings with the large system findings, approximately 165 small and large systems, serving 896,000 people nationally, are estimated to have at least one detection of MTBE.

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Acronyms

CAS	Chemical Abstract Services
CDX	Central Data Exchange
CWS	Community Water System
CCL	Contaminant Candidate List
CCL 2	EPA's Second Contaminant Candidate List
DCPA	Dimethyl Tetrachloroterephthalate (Dacthal)
DDE	1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene
DDT	1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane
DQO	Data Quality Objective
EPTDS (or EP)	Entry Point(s) to the Distribution System
EPA	Environmental Protection Agency
EPTC	s-Ethyl Dipropylthiocarbamate
ESA	Ethane Sulfonic Acid
GIS	Geographic Information System
GW	Ground Water
GWUDI or GU	Ground Water Under Direct Influence (of Surface Water)
HRL	Health Reference Level
LD	Distribution System Location with Lowest Disinfectant Residual
MD	Midpoint Location in Distribution System
MR	Distribution System Location with Maximum Residence Time
MRL	Minimum Reporting Level
MTBE	Methyl Tertiary Butyl Ether
NCOD	National Contaminant Occurrence Database

NIRS	National Inorganics and Radionuclides Survey
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-Transient Non-Community Water System
OGWDW	Office of Ground Water and Drinking Water
PWS	Public Water System
PWSID	Public Water System Identification Number
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RDX	Royal Demolition Explosive
RFG	Federal Reformulated Gasoline
SDWA	Safe Drinking Water Act
SDWARS	Safe Drinking Water Accession and Review System
SDWIS	Safe Drinking Water Information System
SDWIS/Fed	Safe Drinking Water Information System / Federal Version
SP	Sampling Point
SR	Source Water Sample Location
SRMD	Standards and Risk Management Division
SW	Surface Water
SWP	Purchased Surface Water
TAB	Targeting and Analysis Branch
TNCWS	Transient Non-Community Water System
TSC	Technical Support Center (EPA)
UCM	Unregulated Contaminant Monitoring

UCMR 1	First Unregulated Contaminant Monitoring Regulation
USGS	United States Geological Survey
1D2SP	One Detections at Two Sample Points
2D1SP	Two Detections at One Sample Point
2,4-DNT	2,4-Dinitrotoluene
2,6-DNT	2,6-Dinitrotoluene

1. Introduction

The First Unregulated Contaminant Monitoring Regulation (UCMR 1), a revision of the previous Unregulated Contaminant Monitoring program, was designed to create a nationwide record of unregulated contaminant occurrence in public drinking water systems. Contaminant monitoring under the UCMR 1 formally began in January 2001 and was essentially completed by October 2005. This report presents detailed occurrence findings for ten of the contaminants monitored under UCMR 1: six synthetic organic contaminants (1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene, also known as DDE; the mono- and di-acid degradates of dimethyl tetrachloroterephthalate, also known as DCPA or dacthal; s-ethyl dipropylthiocarbamate, also known as EPTC; fonofos; and terbacil), two volatile organic contaminants (1,3-dichloropropene and methyl tertiary butyl ether, also known as MTBE), and two semi-volatile organic contaminants (2,4-dinitrotoluene and 2,6-dinitrotoluene). These ten contaminants are on the second Contaminant Candidate List (CCL 2), for which the United States Environmental Protection Agency (EPA) is currently considering regulatory determinations.

EPA's regulatory determinations for the CCL 2 contaminants named above are supported by the detailed occurrence findings presented here. Brief summaries of the occurrence of 16 other UCMR 1 contaminants are included in Appendix A of this report. Another contaminant on the CCL 2 and also monitored under the UCMR 1 is perchlorate. Perchlorate occurrence analyses based on the UCMR 1 data will be presented in a separate UCMR 1 perchlorate occurrence report.

Three additional CCL 2 contaminants being considered for regulatory determinations, boron, metolachlor, and 1,1,2,2-tetrachloroethane, were not monitored under the UCMR 1. EPA presents the occurrence findings for these three contaminants, plus additional data on 1,3-dichloropropene, in a separate report entitled *The Analysis of Occurrence Data from the Unregulated Contaminant Monitoring (UCM) Program and National Inorganics and Radionuclides Survey (NIRS) in Support of Regulatory Determinations for the Second Drinking Water Contaminant Candidate List* (USEPA, 2008a).

For those contaminants considered as part of the CCL 2 regulatory determinations, a Regulatory Support Document (USEPA, 2008b) provides contaminant-specific information regarding chemical and physical properties, use and release, and supplemental occurrence data and analyses. Based on contaminant occurrence, exposure, and other risk considerations, EPA must determine if regulating these contaminants will present a meaningful opportunity to reduce public health risk.

1.1 Regulatory Background

Under §1445(a)(2)(A) of the Safe Drinking Water Act (SDWA), as amended in 1996, EPA was required to establish criteria for a program to monitor for unregulated contaminants and to publish a list of unregulated contaminants to be monitored. To fulfill the requirements of SDWA, EPA published the Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems (PWSs) on September 17, 1999 (USEPA, 1999). Additionally, §1412(b)(1) required EPA to publish a list of currently unregulated contaminants (the CCL) to assist in priority-setting efforts. The contaminants included on a CCL are not subject to any

current or proposed National Primary Drinking Water Regulation (NPDWR). CCL contaminants may pose risks for drinking water, and therefore may require regulation under SDWA.

The First CCL (CCL 1) contained 60 contaminants, including 50 chemicals or chemical groups and 10 microbiological contaminants or microbial groups. In 2003, EPA released final regulatory decisions on nine of these contaminants (68 FR 42898). The second and current CCL (CCL 2; 70 FR 9071) contains 51 contaminants, consisting of all the contaminants from CCL 1 that did not progress to regulatory determination. The 1996 SDWA Amendments require EPA to make determinations on whether or not to regulate at least five contaminants on a five-year cycle, or three and a half years after each CCL. This report presents contaminant occurrence findings that serve to support the second round of regulatory determinations.

SDWA, as amended in 1986, required public water systems to monitor for specified unregulated contaminants on a five-year cycle, and to report the monitoring results to the States. This monitoring was historically conducted under the UCM program. Unregulated contaminants are contaminants that do not have an established or proposed NPDWR, but they may be formally listed and scheduled for monitoring under Federal regulations. The intent of the monitoring was to gather scientific information on the occurrence of these contaminants to help enable EPA to decide whether regulations were needed. All community water systems (CWSs) and non-transient non-community water systems (NTNCWSs) that had more than 150 service connections were required to participate in this unregulated contaminant monitoring. Smaller systems were not universally required to participate in the monitoring, but they were required to be available for monitoring if the State decided such monitoring was necessary. The 1993 Amendments to SDWA expanded the list of unregulated contaminants that required monitoring under this program.

The 1996 SDWA Amendments directed EPA to develop a revised program for unregulated-contaminant monitoring. The details of the new program, known as the Unregulated Contaminant Monitoring Regulation, or UCMR (now called UCMR 1 to distinguish it from subsequent UCMR monitoring), were formally published in the Federal Register on September 17, 1999 (64 FR 50556). The UCMR 1 and related rules replaced the older (UCM) requirements, putting forth a new list of contaminants, a new set of rules about which systems must monitor, a new structure to the monitoring program, and a new framework to ensure that all the monitoring results are reported to EPA. Monitoring under UCMR 1 began in 2001. UCMR 1 was developed in coordination with the CCL and the National Drinking Water Contaminant Occurrence Database (NCOD). The data collected through the UCMR 1 are first reviewed and checked for quality, and then stored in the NCOD to facilitate analysis and public access. The data are intended to inform the regulatory determination process and support the development of subsequent CCLs. For more details regarding how the UCMR program supports the CCL and SDWA, please refer to http://www.epa.gov/safewater/ucmr/index.html.

1.2 Two-Stage Analytical Approach for Small and Large Systems

A two-stage analytical approach is used to evaluate the UCMR 1 national contaminant occurrence data. The first stage of analysis provides a straightforward evaluation of occurrence of all contaminants under consideration. This "Stage 1 analysis" of occurrence assesses the data sources, quality, and characteristics, and then uses the data to conduct simple, non-parametric,

and conservative assessments for a broad evaluation of contaminant occurrence.[3] Occurrence analyses for each contaminant are assessed at the level of samples, systems, population served by systems, and sample point locations. A typical Stage 1 analysis is a simple count of the number (or percentage) of systems with at least one analytical detection[4] of a specific contaminant, or at least one analytical detection with a concentration greater than a health reference level (HRL).

Based on the Stage 1 analysis, any contaminant found to have significant occurrence at or near HRL concentrations can be studied further with a "Stage 2 analysis." The Stage 2 analysis uses statistical modeling to generate national probability estimates of contaminant occurrence by generating estimated annual (or longer-term) mean concentrations of contaminants at PWSs. This provides occurrence analyses that are less conservative than the Stage 1 analysis (since the Stage 2 analysis is based on estimated mean concentrations rather than on maximum concentrations), and also provides occurrence analyses that may be more reflective of potential chronic exposure.

In other words, the Stage 1 analysis reflects a rough approximation of peak occurrence while the Stage 2 analysis is based on estimated average occurrence. This fundamental difference in the two analytical approaches has a very direct implication: regardless of the occurrence values estimated by the Stage 1 analyses, the Stage 2 occurrence estimates will always be lower. The decision of whether a contaminant should undergo a Stage 2 analysis is based on occurrence analytical criteria, and whether health impacts are likely to occur after chronic (as opposed to acute) exposure. If the estimated occurrence of a contaminant is insignificant using the more conservative Stage 1 analysis, there is no need to analyze that contaminant's occurrence using the Stage 2 analysis.

Because none of the UCMR 1 contaminants discussed in this document were found with significant levels of contaminant occurrence at or near the HRLs of concern based on the Stage 1 analyses, Stage 2 analyses were not warranted for any of the UCMR contaminants. However, a brief description of the Stage 2 analytical approach is presented in Section 5 and a detailed description is presented in Appendix B. Also, to illustrate the types of occurrence findings generated, a Stage 2 analysis of the DCPA degradates was conducted; summary findings are presented in Section 7 and detailed results are presented in Appendix C of this report.

The two-stage analytical approach was previously developed for other EPA Office of Ground Water and Drinking Water (OGWDW) national occurrence studies, including the first Six-Year Review of National Primary Drinking Water Regulations (see USEPA, 2003a). This data management and occurrence analytical approach was peer-reviewed for use under the Six-Year Review. Partly to establish consistency across OGWDW occurrence assessment projects, this two-stage analytical approach has been adapted here for the analyses of the UCMR 1 occurrence data. The UCMR 1 two-stage analytical approach and a draft report of analytical findings based on that approach were also peer-reviewed. Comments from that peer-review have been incorporated into this report.

[3] These analyses are conservative in the sense that they are protective of human health (i.e., they are more likely to overestimate risks to human health than underestimate them).

[4] By definition, an analytical detection is a quantified concentration that is equal to or greater than the laboratory method minimum reporting level (or limit), the MRL.

1.3 Analytical Tools

Database manipulation, data quality assurance checks, and overall data management were conducted in Microsoft Access®. Most statistical analyses were conducted with SAS® statistical software. Additionally, WinBUGS and R code were used to develop the Bayesian hierarchical model that is the basis of the Stage 2 analysis. After analysis, results were typically exported into Microsoft Excel® for development of report tables that present the occurrence findings. Spatial and geographic analyses and presentations of contaminant occurrence were conducted using ArcView Geographic Information System (GIS) version 3.3 (ESRI Software).

2. UCMR 1 Program Overview

2.1 UCMR 1 Design and Implementation

The UCMR 1 database is a compilation of PWS monitoring results for select unregulated contaminants, collected under the authority of the SDWA and the UCMR. The 1999 UCMR (64 FR 50556) (UCMR 1) established a three-tiered approach for monitoring of contaminants, based on the availability of analytical methods and information on contaminant properties. EPA placed twelve contaminants, for which suitable laboratory methods were available, on List 1; these were scheduled to undergo full "Assessment Monitoring." Thirteen chemical contaminants whose laboratory methods were less widely available were placed on List 2; these were scheduled for a "Screening Survey" at a smaller group of systems. The purpose of the Screening Survey is to develop a preliminary assessment of national occurrence for contaminants of concern that may be otherwise too difficult to monitor at a larger scale. EPA also specified one List 3 contaminant (Lead-210); however, EPA did not implement the scheduled UCMR List 3 monitoring ("Pre-Screen Testing").

1,3-Dichloropropene was not an officially listed UCMR 1 contaminant, but 1,3-dichloropropene monitoring was conducted by the same UCMR 1 small systems that conducted List 1 monitoring. Consequently, the 1,3-dichloropropene data presented in the UCMR 1 are only from the List 1 small systems.

The UCMR operates on a five-year cycle, with the first cycle extending from 2001 through 2005, though most monitoring was conducted from 2001 to 2003. All large CWSs and NTNCWSs (i.e., those serving more than 10,000 people), plus a statistically representative national sample of small CWSs and NTNCWSs (i.e., those serving 10,000 people or less), were required to monitor for the List 1 contaminants. This totaled an estimated 2,800 large systems and 800 small systems (USEPA, 2001a).[5] The Screening Survey for List 2 contaminants was designed to be conducted by a total of 300 systems (120 large systems and 180 small systems). PWSs for List 2 monitoring were randomly selected from among the systems required to conduct Assessment Monitoring.

To facilitate laboratory scheduling and other logistical considerations, one-third of the selected small PWSs were required to sample in each year of the program (2001, 2002, and 2003). The small systems were designated to a sampling year by random selection, with a 33% probability for each system to be selected in any of the three years. Because of issues arising during monitoring (e.g., a few systems closing), some of the original 800 selected systems could not conduct monitoring and were replaced with substitute systems (previously selected within the proper system stratification). The large systems could conduct their required one year of monitoring any time during the UCMR 1 cycle.

Surface water (SW) systems were required to sample four times per entry point over a one-year period, while ground water (GW) systems had to sample only twice per entry point over

[5] At the time of the UCMR 1 rule development, there were an estimated 2,800 large PWSs in the United States.

a one-year period.[6] One of the quarterly (SW systems) or semi-annual (GW systems) sampling events had to occur in the defined "vulnerable" period of May through July, or an alternate vulnerable period designated by the State, to ensure monitoring of potentially higher contaminant concentrations. (For example, pesticides often exhibit strong seasonal patterns in drinking water because their application season is concentrated in the spring and early summer, coinciding with annual runoff and recharge periods.) Surface water systems had to select either the first, second, or third month of a quarter and then had to take the remaining required samples at three-month intervals for the following three quarters of the monitoring year.[7] Ground water systems were required to sample during one month of the most vulnerable period and then during one month five-to-seven months earlier or later.[8]

Sampling was conducted at the entry points to the distribution system (EPTDS) after treatment. These entry points were to be representative of each principal non-emergency source of water in use over the 12-month monitoring period. In some cases, EPA allowed monitoring at source (raw) water sampling points (consistent with State-approved compliance monitoring points in States that allow source water sampling.) If a UCMR 1 contaminant was detected in a source water sample, the UCMR required that follow-up samples be collected at the EPTDS (unless there was no treatment), at the monitoring frequency specified in the rule for the contaminant and water source type.

Large PWSs were responsible for collecting all UCMR 1 samples in accordance with the program requirements for timing, frequency, and sampling quality control (QC) procedures. Once samples were collected, large PWSs were responsible for sending the samples to an EPA-approved laboratory for analysis. Systems with their own laboratories approved to perform UCMR 1 analysis on-site could analyze their samples following UCMR 1 methods and QC requirements.

Small PWSs were also responsible for collecting all UCMR 1 samples in accordance with the program requirements for timing, frequency, and sampling QC procedures. However, sample collection for the small systems was conducted differently than the large systems. EPA provided sampling kits to the small systems; in the majority of States, the States actually collected the UCMR 1 samples for the small systems. A very limited number of laboratories were specified to analyze the small system samples, and the small PWSs were responsible for ensuring that the collected samples were sent to the EPA-specified laboratory for analysis. The UCMR 1 program was designed so that EPA paid for the costs associated with shipping samples from small PWSs to the specified contract laboratories, as well as with sample analysis.

Most UCMR 1 data were collected between 2001 and 2003, though some results were reported as late as October 2005. For the large systems, the data submission approach was

[6] Note that not all systems took the required number of samples. See Section 3.3.2 for details on completeness of UCMR 1 sampling.

[7] That is, surface water systems were required to monitor either in January, April, July, and October; or February, May, August, and November; or March, June, September, and December.

[8] For example, if a ground water system selected May as its "vulnerable" month to sample, then the system was required to take its other sample either five to seven months earlier (i.e., Oct, Nov or Dec of the preceding year) or five to seven months later (i.e., Oct, Nov or Dec of the same year).

electronic posting by laboratories directly to a web-enabled database that allowed PWSs to review and subsequently approve their data and release it EPA, with concurrent review by the States. In the case of small systems, the specified contract labs were required to submit the laboratory findings electronically to EPA, with copies sent to the PWSs and States for review.

Exhibit 2.1 presents the list of ten of the CCL 2 contaminants monitored under UCMR 1. DCPA mono-acid and di-acid degradates were monitored in aggregate, because the approved UCMR 1 analytical methods do not differentiate between the two degradates. As stated earlier, although 1,3-dichloropropene was not an official UCMR 1 analyte, it was monitored alongside List 1 contaminants at small systems. No large-system monitoring of 1,3-dichloropropene was conducted. 1,3-Dichloropropene data were needed because problematic sample preservatives had potentially compromised some older 1,3-dichloropropene monitoring results. The new 1,3-dichloropropene data collected by all UCMR 1 small systems were handled according to improved protocols.

Exhibit 2.1: Contaminants Considered During CCL 2 Regulatory Determinations That Were Monitored Under the UCMR 1

Contaminant Name	SDWIS Number[1]	CAS Number	Contaminant Use and Description	Analytical Method
List 1 (Assessment Monitoring)				
2,4-dinitrotoluene	2270	121-14-2	Used in the bedding & furniture industries, the production of ammunition, explosives, and dyes; also used in automobile air bags. Most environmental releases through industrial wastewater discharges & improper waste disposal.	525.2
2,6-dinitrotoluene	2266	606-20-2	Same as 2,4-dinitrotoluene (above).	525.2
DCPA mono-acid degradate [2]	NA	887-54-7	DCPA is a pre-emergent herbicide used historically on annual grasses & broadleaf weed species. Degrades into a transitory form (mono-acid) & a moderately persistent form (di-acid).	515.1 515.2 515.3 515.4
DCPA di-acid degradate [2]	NA	2136-79-0		
4,4-DDE	2069	72-55-9	No commercial uses; only found in the environment as a result of contamination or breakdown of parent chemical, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane (DDT).	508 508.1 525.2
EPTC	2052	759-94-4	Selective herbicide mainly used for control of weeds in the cultivation of beans, forage legumes, potatoes, corn, & sweet potatoes.	507 525.2
MTBE	2251	1634-04-4	Oxygenate commonly added to gasoline (until recently) to improve air quality.	502.2 524.2
Terbacil	9125	5902-51-2	Selective herbicide, inhibits photosynthesis. Used to control grasses & broad-leaf weeds in agricultural fields & fruit & nut orchards.	507 525.2
List 2 (Screening Survey)				
Fonofos	2570	944-22-9	Applied to soil to control insects around crops (predominantly corn).	526
Non-List Monitoring[3]				
1,3-dichloropropene	2413	542-75-6	Soil fumigant to control nematodes & other soil pests, particularly for root predation.	524.2

1. "NA" indicates that there is no 4-digit Safe Drinking Water Information System (SDWIS) contaminant code for the contaminant.
2. The approved methods for the two DCPA degradates do not allow for the identification and quantification of the individual acids; thus, a single analytical result was obtained and reported for total DCPA mono- and di-acid degradates.
3. Although 1,3-dichloropropene was not officially a UCMR 1 contaminant, EPA collected 1,3-dichloropropene data from the UCMR 1 small systems that sampled for the List 1 contaminants, using an appropriate analytical method that does not involve sample preservatives sodium sulfate or sodium thiosulfate.

Two categories of PWSs were exempt from UCMR 1 monitoring. First, PWSs that purchase their entire water supply from another PWS were not included since monitoring at these systems could result in double-counting of estimated population exposure. Second, transient

non-community water systems (TNCWSs) were also excluded since estimating contaminant exposure for transient populations can be difficult and inconclusive.

2.2 Large Systems (Serving > 10,000 People)

The UCMR 1 required that all CWSs and NTNCWSs that serve more than 10,000 people and do not purchase all of their water from another system monitor their water for the presence of the 12 List 1 contaminants. At the time of the UCMR 1 rule development, available data indicated that there were an estimated 2,800 large PWSs eligible for monitoring in the United States. However, the most recent Safe Drinking Water Accession and Review System (SDWARS) data indicate that there are 3,100 large systems eligible for UCMR 1 large system sampling. The final UCMR 1 list of large systems requiring monitoring included 3,100 systems. For List 2 monitoring, a random sample of 120 large systems was selected from among the large systems conducting List 1 monitoring.

2.3 Small Systems (Serving ≤ 10,000 People)

EPA used a stratified random sample of 800 small systems to conduct Assessment Monitoring for the List 1 contaminants. The sample size was determined by a combination of statistical and budgetary considerations. A sample of 800 systems is more than the approximately 720 systems (659 CWSs and 61 NTNCWSs) needed to meet necessary programmatic data quality objectives (DQOs), and enables the selection of at least two PWSs in each State to ensure a broad and diverse geographic coverage. For more detailed information on the selection of the 800 PWSs, refer to "Statistical Design and Sample Selection for the Unregulated Contaminant Monitoring Regulation" (USEPA, 2001b) and "Unregulated Contaminant Monitoring Regulation: Implementation Report" (The Cadmus Group, Inc., 2002). Note that, for List 2 monitoring, an additional random sample of 180 small systems was selected from among the 800 small systems conducting List 1 monitoring.

2.3.1 Stratified, Random, Statistically-Weighted Sample

The UCMR 1 small system monitoring program was designed to provide EPA with high quality data about contaminant occurrence in finished drinking water from a nationally representative sample of small PWSs. Such data support statistically valid estimates of national occurrence at small systems. Combined with information about the size of the populations served by these systems, the data also enable EPA to perform rudimentary exposure assessments. The data also enable EPA to draw conclusions about some sub-categories of systems (e.g., those served by ground water or surface water). While the small system sample is nationally representative, the sample size does not provide representative occurrence findings at the State level.

2.3.2 Sample Allocation of Systems to Strata and States/Territories

The UCMR 1 small system sample size of 800 was determined by a combination of statistical and budgetary considerations. Systems were allocated by size categories, source water types, system types, and location (in what State/Territory they were located). With 3 size

categories, 2 source water types, 2 system types, and 56 States and Territories, there were 672 strata (3 x 2 x 2 x 56 = 672) in which to allocate the 800 systems.

EPA used the following three steps to select the group of 800 small systems:

1. First, the 800 sample (system) allocations were distributed across the 56 States and Territories. The allocation was proportional to population, but at least two systems were allocated to each State or Territory. (Note: the District of Columbia was not included because it has no small systems.)

2. Within each State or Territory, a probability was assigned to each of 12 system categories (according to system size, source water type, and system type), based on available data.

3. Within each State or Territory, a category was selected at random for each allocated system, using the probabilities computed in step 2. Within the selected category, a PWS was selected at random (weighted by population served).

The first step was accomplished in the following manner: To obtain the most precise national exposure estimates, EPA initially allocated systems to each State in proportion to the State's population served. For example, Texas has about 8.9% of the population served by small systems, so small systems in Texas would ideally constitute about 8.9% (~71) of the 800 systems selected. However, this population-weighted allocation had two drawbacks: (1) States can be assigned a fractional number of systems and (2) some small States can get less than two systems.

To address the drawbacks, all allocations were rounded up to the next integer, and any allocation of less than two was increased to two. At this point, the total number of allocated systems was more than 800. Systems were then removed one at a time from various States' allocations, in such a way as to minimize the increase in variance of an overall statistical estimate of exposure without reducing any State allocation below two, until the total allocation was reduced again to 800. It should be noted that the results were very close to what one would get by simply rounding the original population-weighted allocations to the nearest integers.

Given the small sample size for individual States, statistically valid conclusions on small system occurrence at the State level are not possible. However, EPA still considered it important that all States be represented and have the opportunity to participate in the UCMR 1. Some contaminants, such as some pesticides, may only be used intensively in specific regions of the country. It is possible that with the relatively small number of systems in the representative sample, monitoring may miss contaminants with such targeted regional use patterns. However, including systems from every State in approximate proportion to the population served should ensure that contaminants with regional use patterns, to the extent that they potentially contaminate water supplies, are proportionately represented by the national sampling design. Also, because the large system UCMR 1 data were generated by a census of large systems, the combined small and large system monitoring results can provide an approximation of occurrence at the State level.

3. UCMR 1 Data Description

This section of the report describes the management of the UCMR 1 monitoring data (also referred to as the contaminant sample data or analytical data), and the quality review measures applied to the data. It also includes an assessment of the representativeness and completeness of the data set, as well as various temporal, geographical, and other characteristics of the data. The contaminant sampling data described in and used as the basis for this report are available to the public on EPA's website at the National Contaminant Occurrence Database (NCOD), available on the Internet at: http://www.epa.gov/safewater/data/ncod/index.html. Note that the information presented in Sections 3.1-3.3.2 is relevant to all 26 contaminants[9] with UCMR 1 data. Sections 3.3.3-3.4.3 focus only on the ten contaminants considered during CCL 2 regulatory determinations.

The sampling data provided in this report reflect UCMR 1 analytical samples submitted and quality-checked as of March 2006 and posted on EPA's NCOD in October of 2007. Data for all 26 contaminants underwent quality control and quality assurance (QA/QC) procedures prior to their upload to the NCOD and their use in the occurrence analyses presented in this report. EPA routinely posted preliminary UCMR 1 data on EPA's NCOD to provide the public with monitoring results as they were generated and quality-checked. However, any analyses based on UCMR 1 data released prior to March 2006 should be interpreted with caution, as they were conducted using a preliminary and incomplete UCMR 1 data set.

The UCMR 1 monitoring plan and implementation has been described in full in several other published reports. Interested parties are referred to: the Federal Register announcement of the UCMR (64 FR 50556); "Technical Background Information for the Unregulated Contaminant Monitoring Regulation" (USEPA, 2000); "Reference Guide for the Unregulated Contaminant Monitoring Regulation" (USEPA, 2001a); "Statistical Design and Sample Selection for the Unregulated Contaminant Monitoring Regulation (1999)" (USEPA, 2001b); and the "Unregulated Contaminant Monitoring Regulation: Implementation Report" (The Cadmus Group, Inc., 2002).

3.1 Data Overview

This report used the essentially complete version of the UCMR 1 data set, the March 2006 version, which contains more than 400,000 individual sample analytical results for the 26 contaminants, including more than 240,000 sample results for ten of the CCL 2 contaminants monitored under the UCMR 1. The data set includes contaminant sample analytical results for all of the List 1 and List 2 chemical contaminants, with the following exceptions: alachlor ethane sulfonic acid (ESA), Royal Demolition Explosive (RDX), and Polonium-210 (these were excluded for lack of approved, cost-efficient analytical methods); 2-methyl-phenol was added, and; DCPA mono- and di-acid degradates were combined into one parameter. Contaminant samples were collected between May 1, 2000 and October 25, 2005, with almost 95% collected between January 2001 and December 2003, the core three-year period of the UCMR 1. Samples were collected from all 50 States, plus Washington D.C., Tribal Nations, Puerto Rico, the American Virgin Islands, Guam, and the Commonwealth of the Northern Mariana Islands.

[9] The 26 contaminants refer the 25 official UCMR 1 List 1 and List 2 contaminants plus 1,3-dichloropropene, which was added as a non-list contaminant for monitoring by small systems.

3.2 Data Management

This section describes how the UCMR 1 data were collected, maintained, and organized by EPA. Quality assurance/quality control (QA/QC) procedures are also described. Data discussed in this section include the water sample analytical data (monitoring results that define contaminant occurrence) and PWS inventory information (data that define characteristics of the participating drinking water systems). Exhibit 3.2.1 shows the sample-level data elements and Exhibit 3.2.2 shows the system-level data elements included in the UCMR 1 database.

Exhibit 3.2.1: UCMR 1 Data Elements Related to Analytical Samples

Data Element	Data Type	Description
PWSID	Alpha-numeric	9-digit identification number unique to each public water system
FacID	Alpha-numeric	5-digit identification number unique within each PWS for each applicable facility
SPID	Alpha-numeric	Sample point identification number
Sample_pt_type	Alpha	Type of sample point tested
EP	Alpha	Entry-point to the distribution system (sample collection location)
SR	Alpha	Source water sample collection location (untreated raw water)
Sample_collection_date	Numeric	Date sample was collected (month-day-year)
Sample_identification_number	Alpha-numeric	Identification number for each sample
Parameter	Alpha	Commonly used contaminant name
Results_sign	Alpha	Code to determine if analysis result is greater than or less than MRL
eq	Alpha	Result is greater than or equal to MRL
lt	Alpha	Result is less than MRL (or not detected)
Results_value	Numeric	Concentration of the sample
Analytical_result_unit_measure	Alpha	Reporting units of analytical result (e.g., μg/L)
Analytical_method	Numeric	EPA-approved analytical method used
MRL	Numeric	Minimum Reporting Level for sample
MRL_unit	Alpha	Reporting units of MRL

Exhibit 3.2.2: UCMR 1 Data Elements Related to Systems (Inventory Information)

Data Element	Data Type	Description
PWSID	Alpha-numeric	9-digit identification number unique to each public water system
State	Alpha	State or Territory identification abbreviation
PWS_Name	Alpha	Proper name of system or water source
Small_Large	Alpha	Whether system sampled as a large system (census) or small system (survey)
Size_Category	Alpha	One of five size categories defining gross population served
Very Small	Alpha	Serving up to 500 people
Small	Alpha	Serving 501-3,300 people
Medium	Alpha	Serving 3,301 - 10,000 people
Large	Alpha	Serving 10,001 - 50,000 people
Very Large	Alpha	Serving more than 50,000 people
GW_SW	Alpha	Whether system was analyzed as a ground water or surface water system
Water_Type	Alpha	Source water type of system
GW	Alpha	Ground water
GU	Alpha	Ground water under the influence of surface water (classified as SW)
Mix	Alpha	Mix of ground water and surface water (classified as SW)
SW	Alpha	Surface Water
SWP	Alpha	Purchased Surface Water (classified as SW)
PWS_Type	Alpha	Type of system
CWS	Alpha	Community Water System
NTNCWS	Alpha	Non-Transient Non-Community Water System
Population served	Numeric	Population served by the PWS

3.2.1 Quality Assessments for Submitted Data

There was some flexibility for PWSs in collecting and submitting UCMR 1 data. The UCMR 1 data collection period officially began in January of 2001, but systems were allowed to report results of previously collected drinking water contaminant data for any of the UCMR 1 contaminants, as long as the data met specific data quality requirements. Information on the criteria for accepting historical data can be found in the "UCMR Reference Guide" (USEPA, 2001a).

Laboratories submitted UCMR 1 analytical results from large systems directly over the Internet, through EPA's Central Data Exchange (CDX). The CDX served as a secure central point where PWSs, laboratories, States, and EPA could submit, view, review, and approve

UCMR 1 data. Once data were submitted via CDX and approved, they were stored in SDWARS/UCMR – the main database for the upload and reviewing of UCMR 1 data.

Numerous controls were established to prevent unauthorized entry into the CDX and the SDWARS/UCMR storage system, and to prevent the potential loss of data or inappropriate transformations. For example, CDX requires users to register prior to being allowed access to data reporting and reviewing sections. PWSs and analytical laboratories were only allowed access to their own information. While PWSs had the ability to review and approve data, they did not have access to alter data. Furthermore, the SDWARS/UCMR system had a number of electronic back-up provisions and a requirement for off-site storage and duplicate files, so there was minimal risk that data sets would be lost to tampering, system failure, or physical destruction. The UCMR 1 Program Implementation Manager was the controlling authority for the storage of and access to UCMR 1 data prior to public release.

UCMR 1 large system data were checked and verified for accuracy. Error correction before electronic submission of data was the responsibility of the analytical laboratory. Once the laboratory submitted results to EPA via the CDX, the laboratory had to approve the results prior to their release to PWSs. Each PWS then had 30 days after the month in which it received results to review the data and approve it electronically. Further review, and changes, and final approval of data by EPA, State, and PWS authorities was completed within 60 days of the approval by the PWS. At no point were data accepted for inclusion in SDWARS/UCMR without the direct verification of that data by the submitting authority.

UCMR 1 data that were ready for EPA review were extracted on a monthly basis from the CDX. EPA reviewed all UCMR 1 data that had already passed all the laboratory and PWS reviews. EPA developed an Access database that conducted an automated data review and quality check that flagged records that met the following criteria:

- Records with PWS IDs or Lab IDs that begin with “99” (test data);
- Records for PWSs with the same sample point IDs at multiple facilities;
- Records with a result value of “N/A”;
- Records that are duplicates (i.e., having the same PWSID, Facility ID, Sample Point ID, parameter, and sample collection date)--this category includes both intentional duplicate samples taken to test the sampling process and unintentional, mistaken duplicates;
- Records with batch accuracy less than 2%;
- Records from laboratories not approved for UCMR 1 analyses;
- Records for systems reporting data with List 2 methods where the system is not required to report List 2 data;
- Records for systems reporting data with List 1 methods where the system is not required to report List 1 data;

- Sample point locations not identical to the entry point to the distribution system (EP), or the source sampling point for collection of untreated water (SR) where appropriate.

The process of upload, review, retrieval, and archiving for UCMR 1 small systems differed slightly from that described above for large systems. The 1996 Amendments to the SDWA, which established the UCMR, require EPA to organize and pay for the UCMR 1 sampling at small PWSs. As part of this requirement, EPA had small systems send their samples to specific laboratories contracted by the EPA. These laboratories then reported results to EPA's Technical Support Center (TSC) where the records were reviewed for quality under essentially the same criteria as for large systems (see criteria above). TSC then approved the final records and sent them to PWSs and States for review.

For the March 2006 UCMR 1 data set used to support the analyses in this report, data submitted to EPA that failed UCMR 1 quality approval were deleted according to the described criteria. Deleted records from large systems include the following (note that these are numbers for all of the UCMR 1 contaminants, not just the CCL 2 contaminants monitored under UCMR 1):

- Records from non-approved labs were deleted (8 records);
- If there were duplicate detections, the lesser of the two analytical results was deleted (21 records);
- If there were a mix of non-detect and detect duplicates, the non-detect(s) was deleted (23 records);
- If there were duplicate non-detections, all but one of the duplicate records was deleted (4,643 records);
- Records for systems reporting data with List 2 methods where the system is not required to report List 2 data were deleted (776 records);
- Records from CA4810015 were deleted because the system uses the same water source as CA4810003, and including data from both systems would be double-sampling (44 records);
- Records from the following five systems, because the size of the populations they served had changed and they were no longer officially considered large systems: MA4261024, PR0005226, PR0005246, PR0005617, and TX0150039 (115 records).

Two additional data management adjustments were made regarding sampling points. For systems (typically ground water systems) identified as not requiring and not having treatment, "SR" designated samples were changed to an "EP" designation. Also, approximately 6,000

samples reported as "MD," "LD," "MR" (all distribution system locations)[10] or "UK" (unknown) were changed to EP.

A total of 405,570 UCMR 1 analytical sample records passed quality checks and were used for occurrence analyses. Originally 411,200 sample records were submitted, but 5,630 records (1.37%) were deleted because they failed data quality checks. No records were deleted from UCMR 1 small systems. (For the ten contaminants considered during CCL 2 regulatory determinations monitored under the UCMR 1, a total of 3,075 samples were removed (~1.25%) from the original 245,702 sample results for those ten contaminants.) Subsequent to the QA/QC effort, there was a total of 375,805 sample results for the List 1 Assessment Monitoring contaminants, 29,765 sample results for the List 2 Screening Survey contaminants, and 3,719 sample results for 1,3-dichloropropene (non-list monitoring).

3.2.2 Spatial Data

Occurrence information was mapped to the greatest degree of geographic accuracy possible with the available data. Facility location data were used to develop maps using ArcView GIS software. All maps were created and edited using ArcView 3.3 GIS software. The locational data enabled only general identification of locations for PWSs located in Alaska, Hawaii, and Puerto Rico.

3.3 Assessments of Data Completeness and Representativeness

To ensure that occurrence estimates based on UCMR 1 data dependably reflect national conditions, the completeness and representativeness of the UCMR 1 contaminant sample data were assessed. Background discussions of data quality issues can be found in the UCMR 1 statistical design (USEPA, 2001b) and the quality assurance project plan (QAPP) (USEPA, 2003b). The QAPP specified quantitative data quality objectives (DQOs) for the completeness and representativeness of small system data collected under UCMR 1. The small system data in the March 2006 data set satisfy those DQOs indicating the small system data are complete and representative. Although no formal DQOs were established for large systems, the large system census had a very high participation rate and a very large portion of the submitted data passed the general data quality criteria checks described in Section 3.2.1 (above). These and other quality assessments (described below) suggest the large system contaminant occurrence data are dependable for national contaminant occurrence analyses, although there is some potential bias for underestimation of occurrence in the large PWSs. More detailed discussions on these topics continue below.

3.3.1 Data Completeness

Small Systems (Serving ≤ 10,000 Persons)

For the statistical sample of small systems, there was a DQO for the completeness of occurrence data reported to EPA, with two components. The DQO specified that 90% of data

[10] These codes represent *Aeromonas* sampling locations (MD = a midpoint location in the distribution system with typical disinfectant residual levels; MR = a location representing the maximum residence time in the distribution system; and LD = a location in the distribution system with the lowest disinfectant residual).

submitted be acceptable (i.e., in conformance with QC criteria, with all data elements present and accurate), and that acceptable data be obtained from 82.375% of selected PWSs (USEPA, 2003b). Although all selected PWSs were required to collect and report UCMR 1 monitoring data, it was anticipated that in certain instances some systems may not have been able to participate, that some samples may not have been collected, or that some results may have not been reported. Achieving these DQOs ensures adequate data quality for end-use applications while recognizing the practical realities of PWS monitoring that some required data will not be collected and/or reported.

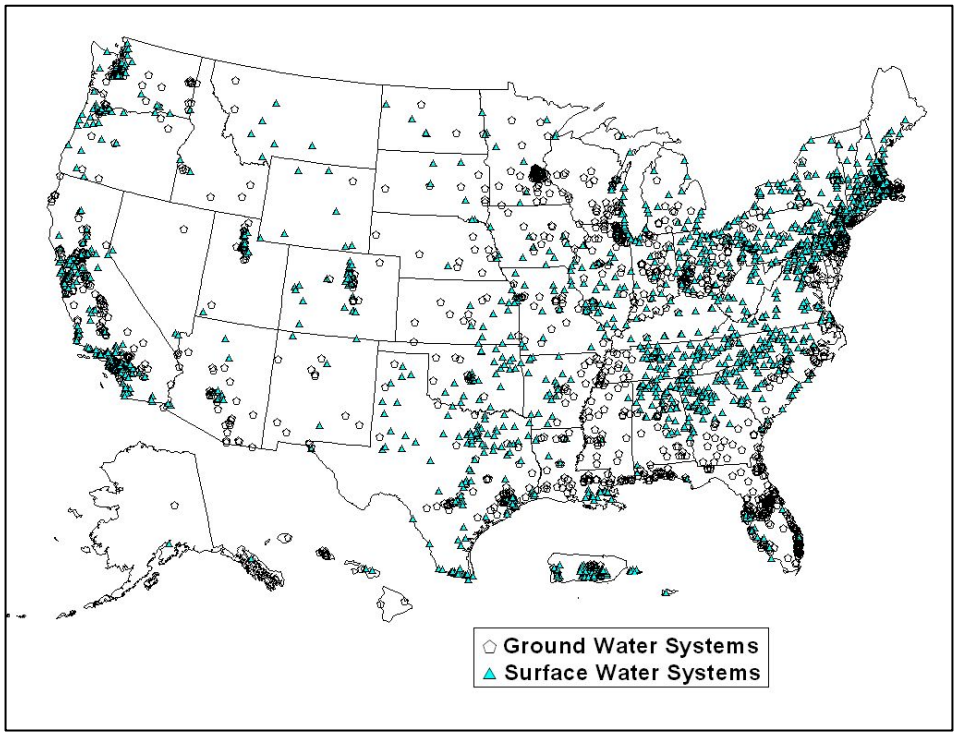
In the March 2006 data set, all small system data submitted (100%) conformed to every QC criterion. (EPA and States maintained significant oversight in the implementation of sampling at the relatively few small systems conducting UCMR 1 sampling, and only a small number of laboratories conducted all the analyses of the UCMR 1 small systems data.) A total of 48,050 analytical sample records were submitted by small PWSs and no records were rejected due to failing QA/QC criteria This significantly exceeds the DQO of 90% of acceptable data. Of the statistical design total of 800 small PWSs, 797 (99.6%) collected and reported acceptable data for the List 1 contaminants. This also surpasses the DQO goal of 82.375%. (Note: Only 796 systems reported data for 1,3-dichloropropene, MTBE, and nitrobenzene, reducing the response rate slightly to 99.5%.)

The DQO to obtain acceptable data from 82.375% of small PWSs represents the smallest number of PWSs that still allows a national occurrence estimate for small PWSs and maintain a 99% confidence interval with a 1% margin of error. Achieving these DQOs suggests that the small system sample is representative and complete (with acceptable sampling error and/or bias). Achieving and surpassing the completeness DQOs for small systems helps UCMR 1 meet its other data quality goals as well.

Large Systems (Serving > 10,000 Persons)

No formal completeness DQO was established for the census of large systems. As of March 2006, large PWSs submitted 363,150 analytical sample records; a total of 5,630 records (1.6 %) were removed because they failed the QA/QC criteria described above. A total of 3,090 out of the 3,100 eligible large PWSs had submitted at least some UCMR 1 monitoring data, giving an overall large system response rate of 99.7%. The geographic distribution of the 3,090 large systems that did provide UCMR 1 data is illustrated in Exhibit 3.3.1. The large system response rates for individual contaminants are briefly described below in Section 3.3.2., and in Section 6.

Exhibit 3.3.1: UCMR 1 Large Systems by Source Water Type



Additional measures of completeness

For additional measures of completeness, EPA assessed the proportion of small and large facilities that had the required number of analytical sample records per contaminant (i.e., two samples from each entry point in a GW facility and four samples from each entry point in a SW facility).[11] EPA made use of the traditional distinction between system types, where systems with mixed GW and SW sources and/or GU (ground water under the influence of surface water) sources are categorized as SW systems. Under the UCMR 1, however, this distinction was made not only at the system-level, but also at the facility-level. For example, although a PWS is designated as a SW PWS because it has one SW source and one GW source, if the water from the two sources was treated by separate facilities, the system was permitted to monitor the water from the GW source on the GW schedule (i.e., two times per year), while monitoring the water from the SW source on the SW schedule (i.e., four times per year). This important detail affects measures of UCMR 1 completeness. Therefore, the assessments of completeness for this report were conducted at the facility-level rather than at the system-level.

The UCMR 1 data base (with final, quality-checked data used for occurrence analyses) contains the required two samples for approximately 91% of small ground water facilities (average of 1.93 samples per facility, compared with the ideal of 2), and the required four samples per contaminant at 77% of small surface water facilities (average of 3.74 samples per

[11] Generally, a facility is a treatment plant or ground water distribution plant without treatment. Several facilities can be a part of a single system.

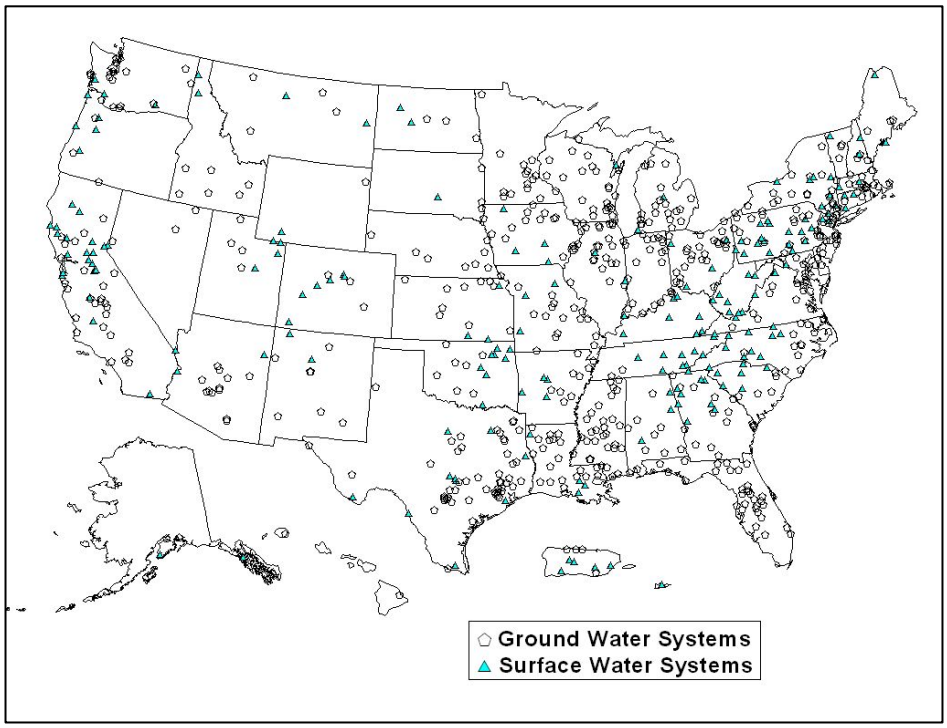
facility, compared with the ideal of 4). The database contains the required number of samples per contaminant at 79% of large ground water facilities (average of 1.92 samples per facility) and at 79% of large surface water facilities (average of 3.91 samples per facility). One likely reason that not all required samples at all systems were collected is that no samples were collected at facilities that were temporarily off-line due to seasonal use or maintenance.

3.3.2 Data Representativeness

Small Systems (Serving ≤ 10,000 Persons)

The small system sampling design incorporated a stratified sampling approach to enable statistically valid occurrence analyses according to system size (based on population served) and water source type (surface water or ground water).[12] This stratified, population-weighted, random selection process is described in detail in USEPA (2001b) and summarized in section 2.3, above. Statistical design, program DQOs, and cost/schedule considerations resulted in a sample design that selected 800 small PWSs that collectively would provide nationally representative contaminant occurrence data. Exhibit 3.3.2.a illustrates, by source water type, the geographic distribution of the small PWSs that conducted and reported UCMR 1 monitoring.

Exhibit 3.3.2.a: UCMR 1 Small Systems by Source Water Type



[12] The number of NTNCWSs designated and selected for UCMR 1 monitoring does not support a statistically valid analysis of only NTNCWSs.

The UCMR 1 sample of small systems was designed to provide a national exposure estimates with a 1% margin of error and 99% confidence. In other words, if the sampling plan were to be repeated many times, the true occurrence and exposure values would fall within the 1% margin of error around the estimate in 99% of all cases.

Meeting the representativeness objective requires that the designated sample be stratified and implemented correctly. In a small number of cases, the originally selected small systems could not participate (due to closing, change in status, etc.) Multiple replacement systems were statistically selected in the event that the original (or first or second replacement) system could not participate. Two replacement systems for each original were selected from the appropriate size and type stratum using the same process as that for selecting the original system in the sample. A third, or general, list of replacement systems consisted of a randomly selected number of PWSs from the remaining PWSs in the State, regardless of system size category, source water type, and system type.

The designated and actual distribution of the small system sample across strata is shown in Exhibit 3.3.2.b. The differences between the actual distribution and the designed distribution primarily reflect an inability to get an adequate number of NTNCWSs, so a very small number of similarly-sized CWSs were substituted. Exhibit 3.3.2.b shows the final allocation of systems among source water type, system type, and system size categories. Of the 800 small PWSs selected, three systems did not participate in the UCMR 1 small system monitoring. (Two small systems in American Samoa were unable to ship samples back to approved labs within the required "hold time" specified by the UCMR 1 laboratory analytical protocol. One system in Florida could not collect List 1 data.) The resulting 797 participating small PWSs maintain the 1% margin of error with 99% confidence for CWSs while allowing the incorporation of NTNCWSs into the design. These 797 small PWSs (that also meet the completeness DQOs described above) provide a nationally representative sample of systems that provided UMCR 1 contaminant occurrence data.

Exhibit 3.3.2.b: Designed and Actual Small System Allocation for Assessment Monitoring

System Type	Size Category	Ground Water Systems		Surface Water Systems		Total	
		Designed	Actual	Designed	Actual	Designed	Actual
CWS	500 and Under	72	76	47	45	119	123
	501 to 3,300	218	215	41	38	259	253
	3,301 to 10,000	225	230	102	105	327	335
	Total	**515**	**521**	**190**	**188**	**705**	**711**
NTNCWS	500 and Under	31	35	10	7	41	43
	501 to 3,300	31	30	9	7	40	37
	3,301 to 10,000	6	4	8	5	14	9
	Total	**68**	**69**	**27**	**19**	**95**	**89**

Large Systems (Serving > 10,000 Persons)

No formal representativeness DQO was established for large system results. A census, such as that required for all eligible large systems under the UCMR 1 Assessment Monitoring, is by definition the most representative type of sample design. In the March 2006 data set, only 10 of the potential 3,100 large systems that were eligible for UCMR 1 did not submit any monitoring data, resulting in a participation (response) rate of 99.7%. All 10 systems are CWSs and all but one are categorized as a "large" system (serving between 10,001 and 50,000 people). Six of the 10 systems were served by ground water while four were served by surface water. The non-response systems were from four States (FL, ID, LA, and OK) and two Territories (American Samoa and Puerto Rico). These 10 non-responsive systems represent approximately 0.3% of all the 3,100 UCMR 1 large systems, yet less than 0.15% of the population served by the 3,100 large systems.

The only pattern of the non-responsive PWSs is that they are predominantly "large" systems (rather than "very large" systems serving more than 50,000 persons). Otherwise, these systems are very few in number, are distributed across many different States and Territories, and represent both source water types. However, there is a possibility of underestimation of national occurrence due to the non-responsive PWSs. The maximum value of underestimation would be defined by assuming that all non-responsive systems had detections of UCMR 1 contaminants. (There is no information available to EPA that indicates whether this assumption might be true or not.) The number of large PWSs that did not report UMCR 1 monitoring results differed for the individual contaminants, ranging from 21 to 32 PWSs (10 large PWSs reported no data for any of the UCMR 1 contaminants). The contaminant-specific cases of non-responsive systems, and their implications regarding potential occurrence underestimations and analyses, are further discussed in Section 6.

List 2 Screening Survey for Fonofos - Small and Large Systems

In addition to the UCMR 1 List 1 Assessment Monitoring, EPA required monitoring for selected contaminants for which analytical methods were developed but not widely used. EPA designed a random selection of 300 public water systems (180 small and 120 large systems) from those systems conducting List 1 Assessment Monitoring to conduct the UCMR 1 "List 2 Screening Survey," which included monitoring for fonofos.

List 2 systems were selected from all the size and water source categories with each of the five size categories (three small and two large) given equal importance.[13] Therefore, 60 systems were selected from each size category, with the selected systems distributed evenly between surface water and ground water systems, wherever possible. (See USEPA, 2001b and The Cadmus Group, 2002 for more details.) List 2 monitoring for fonofos was primarily conducted in 2001 for small systems and 2002 for large systems.

[13] Selection was not proportionately weighted by population served (as in Assessment Monitoring-List 1) or by the proportion of systems in each size category. If the sample was weighted by population served, a disproportionate number of large systems would be included in the Screening Surveys. If the sample were weighted by the number of systems in each size category, a disproportionate number of small systems would be represented.

The DQOs for completeness were exceeded by the fonofos data. As of March 2006, a total of 643 analytical sample records of fonofos were submitted by small PWSs and no records from small PWSs were rejected because of failing QA/QC criteria. Of the statistical design total of 180 small PWSs, 178 (98.9%) collected and reported acceptable data for fonofos. Large PWSs submitted 1,711 analytical sample records for fonofos; a total of 48 records (2.8%) were removed because they failed the QA/QC criteria described above. Fonofos data were submitted by a total of 117 (97.5%) of the 120 large PWSs selected for List 2 monitoring.

The UCMR 1 fonofos data contain the required two samples for approximately 87% of small ground water facilities (average of 1.87 samples per facility, compared with the ideal of 2), and the required four samples per contaminant at 70% of small surface water facilities (average of 3.60 samples per facility, compared with the ideal of 4). The data base contains the required number of samples per contaminant at 76% of large ground water facilities (average of 1.82 samples per facility) and at 77% of large surface water facilities (average of 3.97 samples per facility). One likely reason that not all required samples were collected at all systems is that no samples were collected at facilities that were temporarily off-line due to seasonal use or maintenance.

3.3.3 Other Characteristics of the UCMR 1 Monitoring Data (Focus Only on Contaminants Considered for Regulatory Determinations)

The following four exhibits (3.3.3.a - d) characterize the data collected for the ten contaminants considered during CCL 2 regulatory determinations by number of samples, number of systems, source water type, system type, and system size (population served). (The data set containing these ten contaminants will be referred to as the "9-Contaminant Data Set.") A temporal characterization of data (samples by year and month) is presented separately in Section 3.4.2.

Exhibit 3.3.3.a. shows the number and percent of samples and systems according to source water type in the 9-Contaminant data set. Source water types are stratified by all classifications, and summaries of ground water and surface water groupings are also presented. For analysis of UCMR 1 data, EPA followed its normal practice of treating mixed water sources (Mix), ground water under the influence of surface water (GU), and purchased surface water (SWP) as surface water.

Exhibit 3.3.3.a: Number of UCMR 1 Analytical Samples and Systems in the 9-Contaminant Data Set, by Source Water Type

System Size	Source Type	Samples		Systems	
		Number	Percent	Number	Percent
Small	GW	19,332	71.2%	590	74.0%
	GU	201	0.7%	4	0.5%
	Mix	397	1.5%	6	0.8%
	SW	7,227	26.6%	197	24.7%
	SWP	0	0.0%	0	0.0%
	Total	**27,157**	**100.0%**	**797**	**100.0%**
Large	GW	112,598	52.3%	1,392	45.1%
	GU	1,568	0.7%	25	0.8%
	Mix	1,107	0.5%	15	0.5%
	SW	75,739	35.2%	1,391	45.0%
	SWP	24,458	11.4%	265	8.6%
	Total	**215,470**	**100.0%**	**3,088** [1]	**100.0%**
All GW sources		*131,930*	*54.4%*	*1,983*	*51.0%*
All SW sources		*110,697*	*45.6%*	*1,904*	*49.0%*
Total		**242,627**	**100.0%**	**3,885**	**100.0%**

1. A total of 3,090 large systems submitted data for at least one of the 26 UCMR 1 contaminants; however, only 3,088 large systems submitted data for at least one of the 10 contaminants considered during the CCL2 regulatory determinations.

Exhibit 3.3.3.b shows the number and percent of samples and systems in the 9-Contaminant data set by system type. Eighty-nine percent of small systems in the data set are CWSs. In the large system census, more than 99% of systems are CWSs, as there were only eight large NTNCWSs. EPA did not include TNCWSs in UCMR 1, both because they compose a small proportion of nationwide drinking water systems, and because they would complicate evaluations for contaminant exposure due to the transient nature of the populations that these sources of drinking water serve.

Exhibit 3.3.3.b: Number of UCMR 1 Analytical Samples and Systems in the 9-Contaminant Data Set, by System Type

System Size	Source Type	Samples		Systems	
		Number	Percent	Number	Percent
Small	CWS	25,245	92.96%	709	89.0%
	NTNCWS	1,912	7.04%	88	11.0%
	Total	**27,157**	**100.00%**	**797**	**100.0%**
Large	CWS	215,183	99.87%	3,080	99.7%
	NTNCWS	287	0.13%	8	0.3%
	Total	**215,470**	**100.00%**	**3,088** [1]	**100.0%**
All CWS sources		*240,428*	*99.09%*	*3,789*	*97.5%*
All NTNCWS sources		*2,199*	*0.91%*	*96*	*2.5%*
Total		**242,627**	**100.00%**	**3,885**	**100.0%**

1. A total of 3,090 large systems submitted data for at least one of the 26 UCMR 1 contaminants; however, only 3,088 large systems submitted data for at least one of the 10 contaminants considered during the CCL2 regulatory determinations.

Exhibit 3.3.3.c is a map of all large and small systems that submitted UCMR 1 data. At least two small systems were sampled in every State and most Territories. One large system and two small systems from American Samoa were originally included in the sampling plan, but none of these three systems provided data. Consequently, American Samoa has been removed from all State-level analyses of the UCMR 1 data. Exhibit 3.3.3.d is a map of all large and small systems that submitted fonofos (List 2) data. These systems represent a subset of the systems presented in Exhibit 3.3.3.c.

Exhibit 3.3.3.c: All Public Water Systems with UCMR 1 Monitoring Results

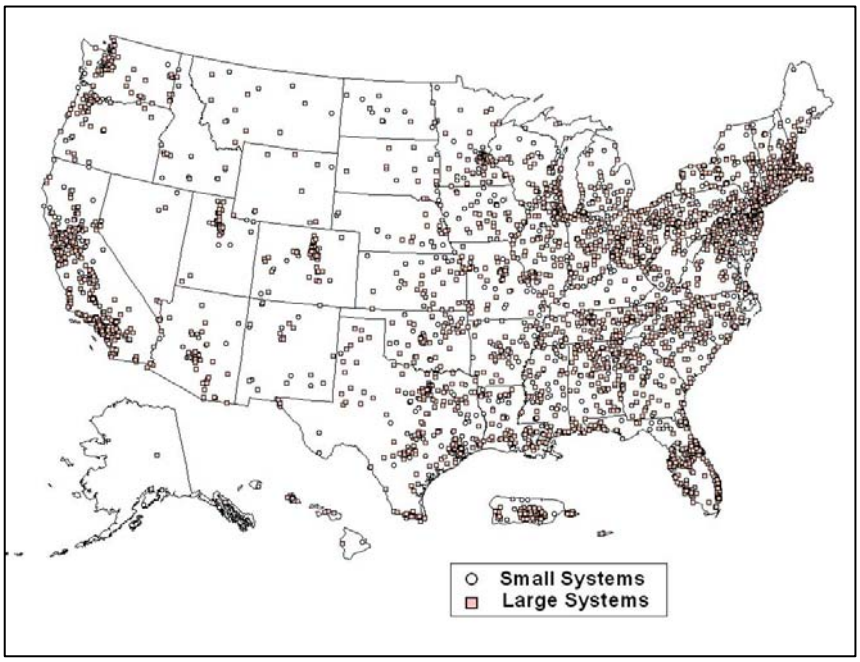
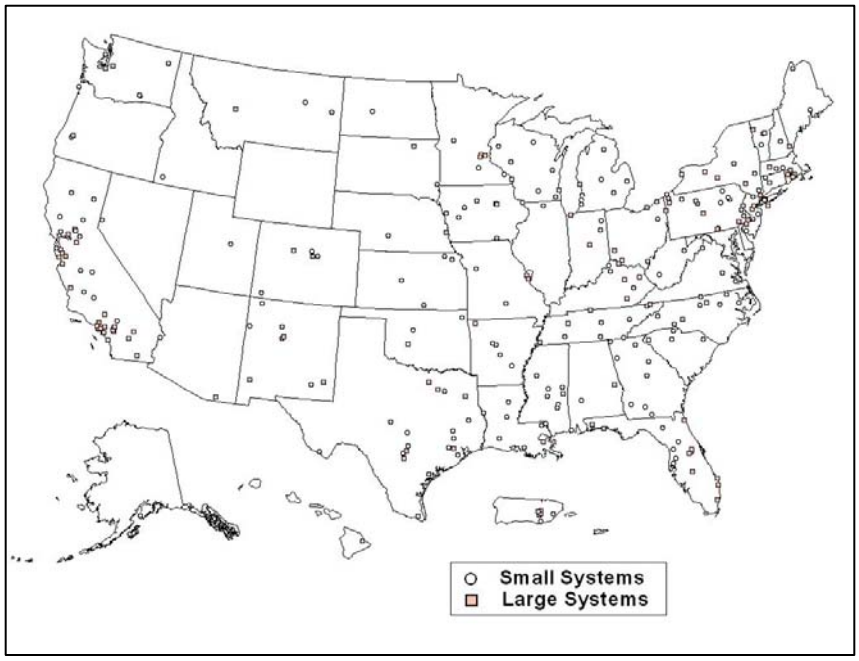


Exhibit 3.3.3.d: All Public Water Systems with Fonofos (List 2) Monitoring Results



Various stratifications of UCMR 1 systems' characteristics are presented in Exhibits 3.3.3.e-g. Exhibit 3.3.3.e summarizes, by State (or Territory), the number of systems in each of five system size classifications and the population served by those systems. Exhibit 3.3.3.f stratifies the systems in each State (or Territory) by source water type, and Exhibit 3.3.3.g stratifies the systems in each State (or Territory) by system type.

Exhibit 3.3.3.e: Distribution of PWSs in UCMR 1 by State & Size Category

State or Territory	Small Systems						Large Systems [1]			
	< 500 customers		501 - 3,300 customers		3,301 - 10,000 customers		10,001 - 50,000 customers		> 50,000 customers	
	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served
Alabama	1	360	3	6,309	11	67,788	72	1,844,637	11	2,047,714
Alaska	3	454	1	3,000	0	0	4	101,537	1	135,000
Arizona	2	212	3	5,036	7	36,050	37	951,370	10	3,254,264
Arkansas	2	670	3	3,298	8	50,227	29	742,366	5	599,674
California	17	4,473	12	22,836	19	132,080	220	6,097,170	139	26,881,229
Colorado	1	400	4	10,908	5	26,119	32	804,204	14	3,243,821
Connecticut	1	72	3	3,748	2	16,014	25	711,319	10	1,658,947
D.C.	0	0	0	0	0	0	0	0	1	927,055
Delaware	1	300	0	0	1	6,500	3	89,460	3	440,000
Florida	4	490	9	14,997	18	102,029	141	3,611,491	66	11,594,779
Georgia	7	1,807	6	11,446	9	48,469	62	2,634,658	17	4,053,865
Guam	0	0	0	0	1	5,504	3	37,965	1	61,750
Hawaii	0	0	1	1,307	2	14,155	11	287,780	3	807,484
Idaho	2	850	1	2,797	5	34,650	11	304,266	2	238,351
Illinois	0	0	12	16,275	16	100,876	89	1,991,360	16	5,537,436
Indiana	2	914	3	6,257	15	105,819	53	1,118,760	13	2,307,971
Iowa	3	968	12	22,047	1	3,690	22	586,771	9	1,073,244
Kansas	2	330	5	8,721	5	29,575	23	493,183	6	1,207,516
Kentucky	1	256	2	2,089	6	38,074	63	1,729,802	5	1,728,876
Louisiana	4	1,460	13	29,299	10	57,664	45	827,051	16	2,347,815
Maine	4	665	1	2,370	1	5,075	12	226,615	1	113,560
Maryland	2	412	4	8,189	2	9,900	21	484,967	7	4,173,168
Massachusetts	0	0	4	7,790	8	55,503	103	2,639,037	17	3,754,044
Michigan	5	926	12	23,015	7	54,756	37	818,082	10	4,596,152
Minnesota	4	774	5	12,882	7	44,678	55	1,220,775	14	1,726,673
Mississippi	2	510	22	37,915	6	40,574	40	872,095	2	322,468
Missouri	5	2,471	7	13,634	8	35,642	39	677,499	9	2,889,857
Montana	2	845	2	4,840	2	9,831	4	112,064	3	222,735
N. Mariana Is.	0	0	1	2,631	1	3,509	1	62,696	0	0
Nebraska	2	350	3	5,152	3	18,033	10	232,814	2	709,420
New Hampshire	1	200	4	9,050	1	7,000	13	255,151	2	223,000
New Jersey	3	600	4	5,100	9	70,620	93	2,641,362	19	5,404,980
New Mexico	3	770	5	6,425	0	0	20	462,074	4	643,300
New York	6	1,315	11	16,844	12	75,872	101	2,645,899	30	17,216,421
Nevada	1	463	3	5,393	0	0	3	84,735	4	1,535,200
North Carolina	4	526	6	12,843	12	85,470	76	2,026,239	17	2,968,658

State or Territory	Small Systems						Large Systems [1]			
	< 500 customers		501 - 3,300 customers		3,301 - 10,000 customers		10,001 - 50,000 customers		> 50,000 customers	
	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served	# PWSs	Pop. Served
North Dakota	1	203	3	7,416	0	0	8	222,052	1	90,599
Ohio	3	1,099	7	13,553	18	108,467	102	2,318,255	23	6,100,615
Oklahoma	3	1,698	3	6,420	9	58,921	29	633,194	8	1,520,991
Oregon	3	785	4	4,104	4	27,004	36	857,803	8	1,626,166
Pennsylvania	13	3,503	12	19,105	12	70,057	99	2,744,392	29	6,171,071
Puerto Rico	2	680	2	3,215	5	32,756	61	1,567,033	16	3,228,427
Rhode Island	0	0	2	4,740	0	0	8	240,079	3	579,233
South Carolina	1	450	5	7,022	5	42,632	38	978,431	10	1,640,733
South Dakota	1	376	2	5,480	1	4,300	11	157,408	2	185,983
Tennessee	2	764	3	4,033	9	68,418	76	1,911,324	15	2,285,334
Texas	14	3,913	24	49,857	33	197,303	152	3,270,267	44	13,223,062
Utah	1	185	2	4,217	4	28,300	33	814,082	12	1,164,251
Vermont	1	322	2	1,827	1	9,020	5	104,300	1	104,970
Virgin Islands	2	400	0	0	0	0	2	64,000	0	0
Virginia	6	1,386	8	12,742	2	8,800	30	1,115,180	12	3,999,833
Washington	5	1,060	8	12,546	4	28,230	53	1,653,266	12	2,795,149
West Virginia	0	0	5	11,958	5	22,803	22	391,405	3	355,659
Wisconsin	2	500	8	13,944	11	74,330	43	862,597	12	1,818,525
Wyoming	2	580	1	1,100	0	0	7	188,407	1	55,608
Tribe - 05	1	191	0	0	0	0	0	0	0	0
Tribe - 06	0	0	1	2,300	0	0	0	0	0	0
Tribe - 07	1	498	0	0	0	0	0	0	0	0
Tribe - 08	2	825	0	0	0	0	0	0	0	0
Tribe - 09	0	0	1	3,200	1	10,000	1	18,244	0	0
Total	***163***	***44,261***	***290***	***533,222***	***344***	***2,183,087***	***2,389***	***60,538,973***	***701***	***163,592,636***
	Small Systems Total: 797 systems, 2,760,570 persons served						***Large Systems Total: 3,090 systems, 224,131,609 persons served***			

1. A total of 10 large systems that were eligible for UCMR 1 monitoring did not report any UCMR 1 results. These systems were located in the following States/Territories: American Samoa (1), Florida (1), Idaho (1), Louisiana (1), Oklahoma (4), and Puerto Rico (2).

Exhibit 3.3.3.f: Distribution of PWSs in UCMR 1 by State and Source Water Type

State or Territory	Small Systems (≤ 10,000 customers)			Large Systems (> 10,000 customers)			All Systems		
	Total	Ground Water	Surface Water	Total	Ground Water	Surface Water	Total	Ground Water	Surface Water
Alabama	15	12	3	83	30	53	98	42	56
Alaska	4	2	2	5	2	3	9	4	5
Arizona	12	11	1	47	34	13	59	45	14
Arkansas	13	9	4	34	14	20	47	23	24
California	48	26	22	359	152	207	407	178	229
Colorado	10	3	7	46	12	34	56	15	41
Connecticut	6	3	3	35	8	27	41	11	30
D.C.	0	0	0	1	0	1	1	0	1
Delaware	2	2	0	6	2	4	8	4	4
Florida	31	31	0	207	189	18	238	220	18
Georgia	22	14	8	79	24	55	101	38	63
Guam	1	0	1	4	1	3	5	1	4
Hawaii	3	3	0	14	12	2	17	15	2
Idaho	8	6	2	13	11	2	21	17	4
Illinois	28	26	2	105	58	47	133	84	49
Indiana	20	19	1	66	45	21	86	64	22
Iowa	16	12	4	31	15	16	47	27	20
Kansas	12	10	2	29	13	16	41	23	18
Kentucky	9	2	7	68	6	62	77	8	69
Louisiana	27	23	4	61	38	23	88	61	27
Maine	6	4	2	13	2	11	19	6	13
Maryland	8	7	1	28	11	17	36	18	18
Massachusetts	12	10	2	120	58	62	132	68	64
Michigan	24	21	3	47	17	30	71	38	33
Minnesota	16	16	0	69	59	10	85	75	10
Mississippi	30	30	0	42	40	2	72	70	2
Missouri	20	17	3	48	26	22	68	43	25
Montana	6	4	2	7	2	5	13	6	7
N. Mariana Is.	2	1	1	1	1	0	3	2	1
Nebraska	8	8	0	12	10	2	20	18	2
New Jersey	16	14	2	112	74	38	128	88	40
New Mexico	8	6	2	24	19	5	32	25	7
New York	29	21	8	131	50	81	160	71	89
Nevada	4	3	1	7	1	6	11	4	7
North Carolina	22	12	10	93	26	67	115	38	77
North Dakota	4	3	1	9	3	6	13	6	7
Ohio	28	24	4	125	61	64	153	85	68
Oklahoma	15	7	8	37	8	29	52	15	37
Oregon	11	6	5	44	14	30	55	20	35
Pennsylvania	37	21	16	128	22	106	165	43	122

State or Territory	Small Systems (≤ 10,000 customers)			Large Systems (> 10,000 customers)			All Systems		
	Total	Ground Water	Surface Water	Total	Ground Water	Surface Water	Total	Ground Water	Surface Water
Puerto Rico	9	4	5	77	20	57	86	24	62
Rhode Island	2	2	0	11	4	7	13	6	7
South Carolina	11	5	6	48	10	38	59	15	44
South Dakota	4	3	1	13	5	8	17	8	9
Tennessee	14	2	12	91	17	74	105	19	86
Texas	71	61	10	196	67	129	267	128	139
Utah	7	4	3	45	13	32	52	17	35
Vermont	4	3	1	6	0	6	10	3	7
Virgin Islands	2	0	2	2	0	2	4	0	4
Virginia	16	13	3	42	1	41	58	14	44
Washington	17	14	3	65	41	24	82	55	27
West Virginia	10	0	10	25	3	22	35	3	32
Wisconsin	21	21	0	55	37	18	76	58	18
Wyoming	3	1	2	8	1	7	11	2	9
Tribe - 05	1	1	0	0	0	0	1	1	0
Tribe - 06	1	1	0	0	0	0	1	1	0
Tribe - 07	1	0	1	0	0	0	1	0	1
Tribe - 08	2	1	1	0	0	0	2	1	1
Tribe - 09	2	1	1	1	0	1	3	1	2
Total	**797**	**590**	**207**	**3,090**	**1,393**	**1,697**	**3,887**	**1,983**	**1,904**

Exhibit 3.3.3.g: Distribution of PWSs in UCMR 1 by State and System Type

State or Territory	Small Systems (≤ 10,000 customers)			Large Systems (> 10,000 customers)			All Systems		
	Total	CWS	NTNCWS	Total	CWS	NTNCWS	Total	CWS	NTNCWS
Alabama	15	15	0	83	83	0	98	98	0
Alaska	4	4	0	5	5	0	9	9	0
Arizona	12	12	0	47	46	1	59	58	1
Arkansas	13	13	0	34	34	0	47	47	0
California	48	43	5	359	358	1	407	401	6
Colorado	10	9	1	46	45	1	56	54	2
Connecticut	6	4	2	35	35	0	41	39	2
D.C.	0	0	0	1	1	0	1	1	0
Delaware	2	2	0	6	6	0	8	8	0
Florida	31	28	3	207	207	0	238	235	3
Georgia	22	20	2	79	79	0	101	99	2
Guam	1	1	0	4	4	0	5	5	0
Hawaii	3	3	0	14	14	0	17	17	0
Iowa	16	16	0	31	31	0	47	47	0
Idaho	8	8	0	13	13	0	21	21	0
Illinois	28	27	1	105	105	0	133	132	1
Indiana	20	18	2	66	66	0	86	84	2
Kansas	12	12	0	29	29	0	41	41	0
Kentucky	9	9	0	68	68	0	77	77	0
Louisiana	27	26	1	61	61	0	88	87	1
Maine	6	3	3	13	13	0	19	16	3
Maryland	8	6	2	28	28	0	36	34	2
Massachusetts	12	11	1	120	120	0	132	131	1
Michigan	24	20	4	47	47	0	71	67	4
Minnesota	16	14	2	69	69	0	85	83	2
Mississippi	30	28	2	42	42	0	72	70	2
Missouri	20	18	2	48	48	0	68	66	2
Montana	6	5	1	7	7	0	13	12	1
N. Mariana Is.	2	2	0	1	1	0	3	3	0
Nebraska	8	7	1	12	12	0	20	19	1
New Hampshire	6	5	1	15	15	0	21	20	1
New Jersey	16	14	2	112	112	0	128	126	2
New Mexico	8	6	2	24	24	0	32	30	2
New York	29	22	7	131	129	2	160	151	9
Nevada	4	3	1	7	7	0	11	10	1
North Carolina	22	20	2	93	93	0	115	113	2
North Dakota	4	4	0	9	9	0	13	13	0
Ohio	28	23	5	125	124	1	153	147	6
Oklahoma	15	15	0	37	37	0	52	52	0
Oregon	11	9	2	44	44	0	55	53	2
Pennsylvania	37	26	11	128	128	0	165	154	11

State or Territory	Small Systems (≤ 10,000 customers)			Large Systems (> 10,000 customers)			All Systems		
	Total	CWS	NTNCWS	Total	CWS	NTNCWS	Total	CWS	NTNCWS
Puerto Rico	9	8	1	77	77	0	86	85	1
Rhode Island	2	2	0	11	11	0	13	13	0
South Carolina	11	9	2	48	47	1	59	56	3
South Dakota	4	4	0	13	13	0	17	17	0
Tennessee	14	13	1	91	91	0	105	104	1
Texas	71	67	4	196	196	0	267	263	4
Utah	7	7	0	45	44	1	52	51	1
Vermont	4	4	0	6	6	0	10	10	0
Virgin Islands	2	1	1	2	2	0	4	3	1
Virginia	16	12	4	42	42	0	58	54	4
Washington	17	15	2	65	65	0	82	80	2
West Virginia	10	9	1	25	25	0	35	34	1
Wisconsin	21	19	2	55	55	0	76	74	2
Wyoming	3	2	1	8	8	0	11	10	1
Tribe - 05	1	1	0	0	0	0	1	1	0
Tribe - 06	1	1	0	0	0	0	1	1	0
Tribe - 07	1	1	0	0	0	0	1	1	0
Tribe - 08	2	2	0	0	0	0	2	2	0
Tribe - 09	2	1	1	1	1	0	3	2	1
Total	**797**	**709**	**88**	**3,090**	**3,082**	**8**	**3,887**	**3,791**	**96**

3.4 Additional Data Management Considerations

A detailed QA/QC process was applied to the UCMR 1 dataset to evaluate many quality aspects of the occurrence data and system inventory. The following sections address data management steps taken with the UCMR 1 large-system population-served values as they relate to consecutive systems, seller/purchaser relations, and the resulting potential double-counting of populations served by systems. Temporal characterizations of the UCMR 1 occurrence data are also presented in this section.

3.4.1 Population Adjustments

Population-served values for small systems (those serving 10,000 or fewer persons) were extensively evaluated as part of the UCMR 1 program statistical design and initial implementation in 1999 and 2000. This was necessary to define the universe of small PWSs from which the statistical sample of representative UCMR 1 small PWSs was drawn. (Details are presented in USEPA, 2001b.) Similarly detailed analysis of large PWSs was not performed at that time. However, extensive work was undertaken subsequently to ensure that all large PWSs (those serving more than 10,000 persons) could be dependably identified for inclusion in the large PWS monitoring under UCMR 1. Large system population-served values were verified and updated during the period of UCMR 1 monitoring through communications with EPA regions, States, and systems. And during UCMR 1 occurrence data, EPA conducted a comprehensive review of the 3,100 large systems' population served values.

This final review was conducted not only to establish current population-served values for the large systems, but also to address the issue of potential double-counting of populations exposed to contaminant occurrence found in "consecutive systems." In a typical consecutive system arrangement, one system acting as a wholesale distributor sells water to another system acting as the retail distributor to customers. If both systems conduct UCMR 1 monitoring and find contaminant occurrence, simply adding up the nominal populations served by each system would result in double-counting and overestimation of contaminant occurrence. To the extent possible, population adjustments were made to large systems to reduce double-counting of population served while ensuring that the populations served by large systems were appropriately represented in UCMR 1 monitoring. A brief description of this process is described below; for more details, please refer to Appendix D.

Two major sources of data were used to determine the population-served values for the 3,100 large systems monitoring under UCMR 1. Both data sets originated from the federal version of SDWIS (SDWIS/Fed), but they represent different time periods and different levels of QC and revision. The first source of data ("SDWIS00") was a copy of the 2nd quarter (June) version (or "2nd quarter freeze") of SDWIS/Fed from 2000. Population-served values for a portion of the systems within this data set had been updated at the request of regional offices, the States, and/or individual systems. The second source ("SDWIS05") represents the 4th quarter (December) version (or "4th quarter freeze") of SDWIS/Fed from 2004, with QC procedures implemented in January 2005.

EPA employed a four-step process to adjust the population-served values for the large systems (for further detail on the process, see Appendix D):

1. EPA modified the SDWIS05 population-served values to reduce double-counting by wholesale and retail public water systems.

2. EPA performed a system-by-system comparison of population served between the SDWIS00 and SDWIS05 data.

3. EPA developed decision criteria to determine which of the two data sets provided a better population estimate for each large system.

4. EPA identified systems for whom the previous steps returned problematic results (less than 1% of the systems), and made system-specific inquiries to establish "final" best estimates for those systems' population-served values.

It is important to note that the adjusted population-served estimates do not define the size categories, nor do the size categories define limits on the adjusted population-served estimates. Systems were assigned to population-served size categories[14] prior to Rule implementation. Because EPA adjusted the population-served values of large wholesale systems to prevent double-counting, the final UCMR 1 population-served values listed for some systems may not match their size classification. For example, a system with a retail population of 100 people that also treats water resold to 20,000 people by another PWS would be classified as "large" (because

[14] The two size categories for large systems are: "large" (systems serving between 10,001 and 50,000 people) and "very large" (systems serving more than 50,000 people).

it nominally provides water to a population of more than 10,000), but it would be assigned an adjusted population-served value of 100. The purpose of the size categories is to aid in analysis and interpretation of results at the system level, and the categories adhere to the original statistical design of the rule implementation. The purpose of the adjusted population-served estimates is to provide a better estimate of potential human exposure to the monitored contaminants, which requires reducing the double-counting inherent in typical consecutive system arrangements.

The population adjustments serve to reduce over-estimation of the number of people potentially exposed to drinking water contaminants monitored under the UCMR 1. The adjustments were made prior to and independent of all the contaminant-specific occurrence analyses, so the actual impact of the adjustments on exposure estimates for any specific contaminant is not known. In principle, the adjustments would most affect exposure estimates for contaminants with more occurrence in consecutive systems.

3.4.2 Temporal Information

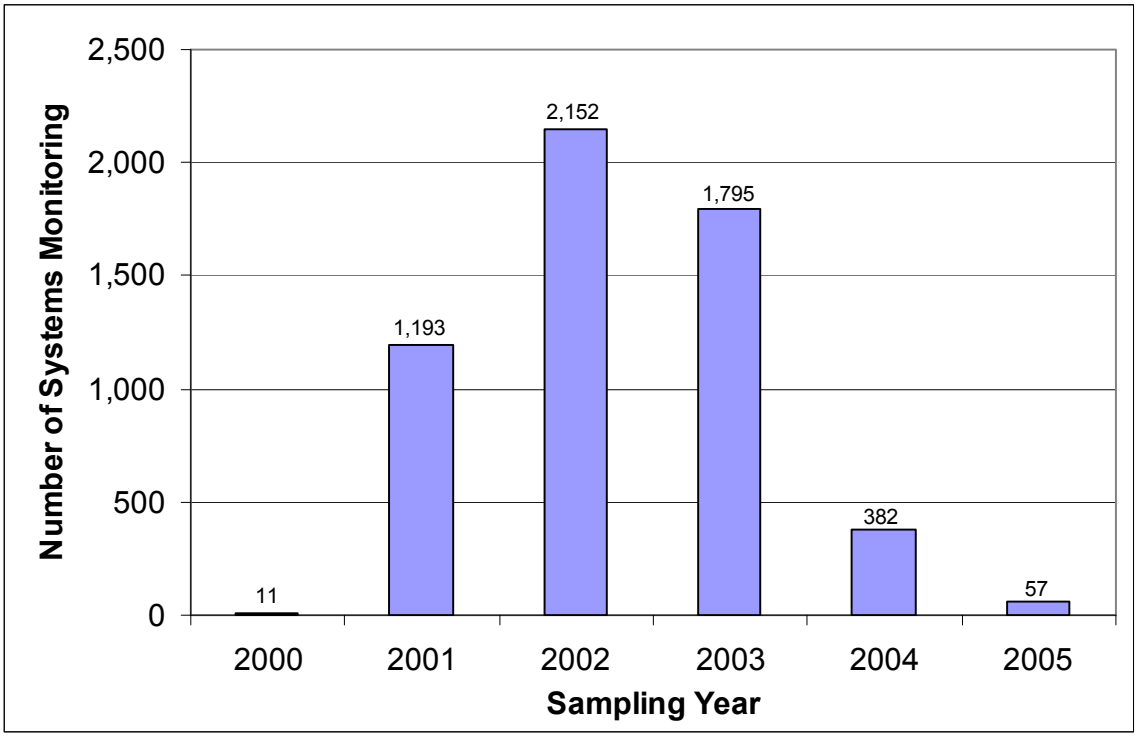
Although samples submitted to EPA under the UCMR 1 were collected between May 2000 and October 2005, most were collected during the three core UCMR 1 sampling years of 2001-2003. Samples collected after December 2003 include samples from systems that began monitoring late (e.g., as a result of a system substitution), systems that were required to re-sample (e.g., to sample at an entry point following a detection in a source water sample), and systems that were under Administrative Orders following EPA Regional enforcement actions for failing to meet their monitoring and/or reporting requirements. Exhibit 3.4.2.a shows the total number of systems collecting UCMR 1 data each year during the sampling period. (Note that these numbers are only for the ten CCL 2 contaminants monitored under UCMR 1.)

Over the course of the monitoring period, the presence and concentration of individual contaminants sometimes varied at individual systems. This variability in contaminant occurrence can result from many factors. Changes in weather, precipitation, and water movement (seasonally and from year-to-year) can affect the fate and transport of a contaminant, and therefore its occurrence in drinking water. Changes in contaminant occurrence may also reflect operational factors such as changed water sources or altered treatment practices. Some systems use different sources of drinking water seasonally in reaction to different seasonal demands and/or different seasonal availabilities of supply.

The UCMR 1 program was designed with concerns about temporal variability in mind. The study design addressed temporal variability in contaminant occurrence by defining a vulnerable period (i.e., the season of greatest likelihood of contaminant occurrence, generally the months of late spring and early summer which are characterized by high volumes of surface water runoff and ground water recharge) and requiring at least one UCMR 1 sample at each system during that period. In addition, the monitoring periods for the large and small systems were staggered over the three years of UCMR 1 monitoring. Approximately one-third of the small UCMR 1 systems, spread across the country, were scheduled to conduct monitoring in each of the three years of UCMR 1 monitoring. The monitoring schedules for these systems also were staggered to ensure that results are collected from every month in every part of the country. Large systems could conduct their one year of monitoring anytime during the UCMR 1 period

from 2001 to 2003. Like small systems, their monitoring schedules were spread throughout the year and were to include one sample during what was considered the most vulnerable season. In this way, the UCMR 1 results reflect multiple seasons and multiple years of climatic conditions throughout the country and are not directly affected (or biased) by weather conditions of a single season, year, or geographic region.

Exhibit 3.4.2.a: Number of PWSs collecting UCMR 1 Samples Each Year, 2000-2005

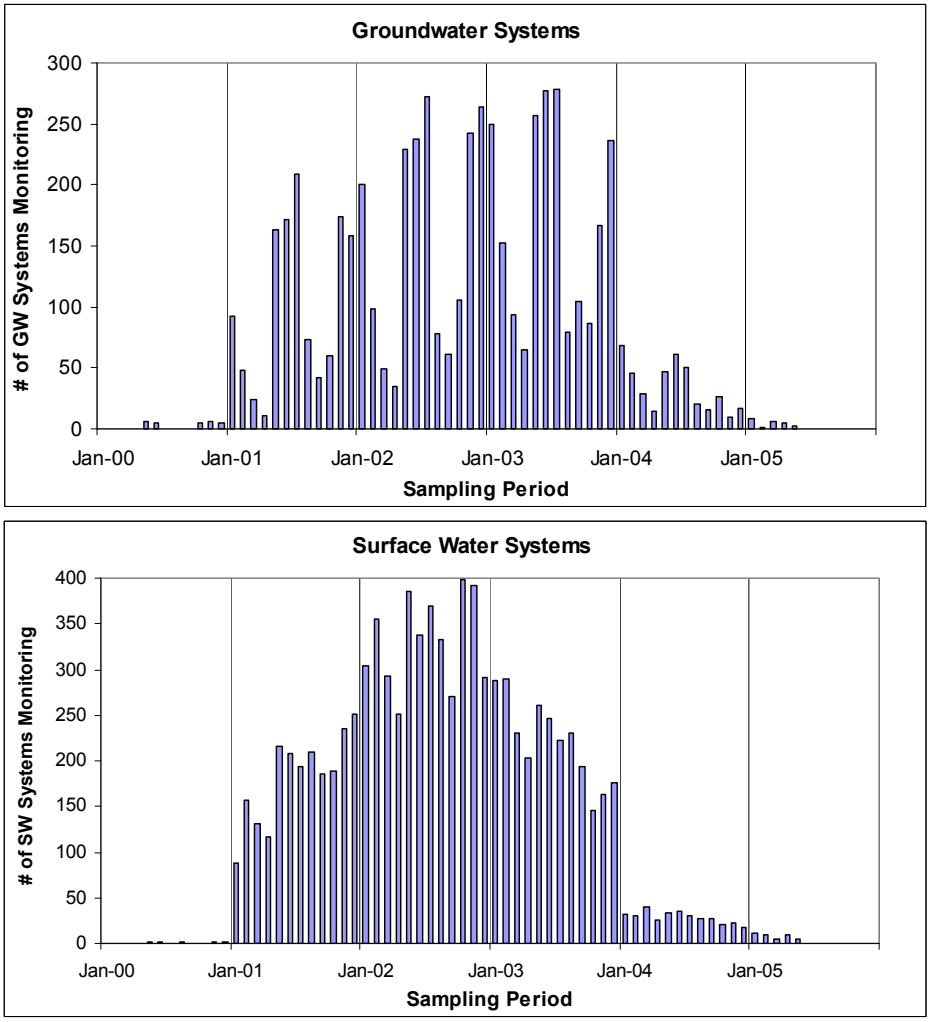


The sum of systems monitoring each year does not equal the total number of UCMR 1 systems because some systems' monitoring schedules can overlap two consecutive calendar years.

Exhibit 3.4.2.b illustrates the distribution of ground water and surface water UCMR samples from month to month. Seasonal fluctuation is evident for ground water sampling, which was conducted biennially. Most ground water samples were collected in the summer months (May, June, July) and the winter months (November, December, January). No distinct seasonal pattern is evident in the surface water sampling, as those systems sampled on a quarterly schedule.

Exhibit 3.4.2.b: Number of PWSs collecting UCMR 1 Samples Each Month, 2000-2005

(Top Graph: GW Systems; Bottom Graph: SW Systems)



3.4.3 Threshold Evaluations

EPA performed occurrence evaluations of UCMR 1 contaminants at multiple thresholds. Every UCMR 1 contaminant's occurrence was evaluated at the contaminant's minimum reporting level (MRL). In this analysis, any concentration *equal to or greater than* the MRL was considered an analytical detection. (Apparent concentrations below the MRL are considered analytical non-detections, because an analytical method can not be relied upon to produce correct and consistent results below its MRL threshold.) Evaluations of occurrence relative to the MRL provide a baseline measure of occurrence.

Detections of UCMR 1 contaminants are usually also evaluated relative to two other concentration thresholds: the Health Reference Level (HRL) and one-half the HRL (½ HRL). The HRL is an EPA-defined benchmark for evaluating contaminant occurrence based on health effects information. Conducting occurrence assessments relative to the health-based thresholds

in addition to the MRL gives additional information on the degree as well as the frequency of contaminant occurrence, and helps to better characterize the distribution of occurrence.

EPA evaluated the best available, peer-reviewed assessments and studies to characterize the human health effects that may result from exposure to individual contaminants when found in drinking water. Based on this characterization, the Agency estimated an HRL for each contaminant. (For MTBE, an HRL value was not available because the risk assessment had not been finalized. Therefore, occurrence measures for MTBE were performed relative to the MRL only.) For more details regarding the development of the HRLs, see Appendix E of this report.

A list of the contaminants with Stage 1 Analyses presented in this report, along with their MRL and HRL values, is presented in Exhibit 3.4.3. For the contaminants whose MRLs are greater than their HRLs (viz., DDE, 2,4- and 2,6-dinitrotoluene, and 1,3-dichloropropene), it is possible that UCMR 1 monitoring did not detect all HRL exceedances at participating systems, so analysis could only be performed at the level of the MRL. The MRLs for DDE, 2,4- and 2,6-dinitrotoluene, and 1,3-dichloropropene are all within the 10^{-4} to the 10^{-6} cancer risk range, which EPA considers an acceptable range for occurrence analysis of carcinogens. In the case of 1,3-dichloropropene, not a single detection was found under UCMR 1 sampling.

The Stage 1 analytical approach can not provide any direct measure of contaminant occurrence at thresholds below the MRL. If warranted, however, the Stage 2 analytical approach, which is based on probabilistic modeling, can be used to estimate system mean concentrations at any level above or below the MRL. This provides occurrence analyses that are less conservative than the Stage 1 analysis (since the Stage 2 analysis is based on estimated mean concentrations rather than on maximum concentrations), and also provides occurrence analyses that are more reflective of potential chronic exposure.

Exhibit 3.4.3: Contaminants Analyzed Using Stage 1 Methodology, Along with Relevant Threshold Values

List	Contaminant Name	MRL (µg/L)	HRL (µg/L)
List 1 (Assessment Monitoring)	DCPA mono- and di-acid degradates	1 [1]	70 [1]
	DDE	0.8	0.2
	2,4-Dinitrotoluene	2	0.05
	2,6-Dinitrotoluene	2	0.05
	EPTC	1	175
	MTBE	5	N/A
	Terbacil	2	90
List 2 (Screening Survey)	Fonofos	0.5	10
Non-List Monitoring[2]	1,3-Dichloropropene	0.5	0.4

[1] The approved methods for the two DCPA degradates did not permit the identification and quantification of the individual acids; thus, a single analytical result was obtained and reported for the two degradates in aggregate.

[2] Although 1,3-dichloropropene was not officially a UCMR 1 contaminant, EPA collected these data from UCMR 1 small system samples alongside data for the regular List 1 contaminants.

4. Description of Stage 1 Analytical Methodology

The Stage 1 analysis consists of simple occurrence measures based on the UCMR 1 data. If necessary, Stage 1 analyses can be followed by Stage 2 analyses for individual contaminants. This chapter is a discussion of the Stage 1 analyses, while the next section (5) discusses Stage 2 analysis.

4.1 Stage 1 Analysis

The Stage 1 statistical analysis of the UCMR 1 data consists of simple counts and descriptive statistics of analytical occurrence data for each of the contaminants. These occurrence analyses are conducted at the level of samples, sample points, systems, and population served. At the sample level, occurrence measures include: the number and percent of samples for each contaminant with analytical detections, and the minimum, median, maximum, and 99th percentile values of those detections. System-level occurrence measures include: the number and percent of systems with one or more analytical detections, and the number and percent of systems with two or more analytical detections of a given contaminant. Population-served occurrence measures include: the number and percent of customers (population served) by systems with one or more analytical detections, and the number and percent of population served by systems with two or more analytical detections of a given contaminant. Sample-point-level occurrence measures are discussed in Section 4.3, below.

4.2 Additional Considerations for Stage 1 Analysis

4.2.1 Ground Water and Surface Water Comparisons

Given the different sampling schedules of ground water systems (two samples per year) and surface water systems (four samples per year), care must be taken regarding any sample-level comparative analyses between the two source water types. For example, if the true rate of detection for a given contaminant was identical for both GW and SW systems, one would expect to see roughly twice the number of detections in the SW systems, simply because SW systems collect twice as many samples. Estimating the percentage of detections by source water type (i.e., dividing the raw number of detections by number of samples taken) corrects for this difference and provides a fair comparison of detection rates across SW and GW systems. System-level and population-served-level analyses also account for the different sampling frequencies.

4.2.2 Large System and Small System Totals

When presenting the Stage 1 Analyses, it is sometimes useful to summarize the occurrence of a contaminant as a single number or percentage. When doing so, however, consideration should be given to the distinction between analytical results from the small system sample and large system census. Simply adding the number of both small and large systems' detections may undercount the actual number of detections at the nation's small systems. While such simple summaries accurately present actual UCMR 1 monitoring results, extrapolation of small system results is necessary to produce accurate national contaminant occurrence estimates.

4.2.3 Extrapolation of the Small System Survey Results

Under the UCMR 1, the 800 small systems (serving ≤ 10,000 persons) selected to conducting monitoring were a stratified, random, statistically-weighted sample of the nation's small systems. These systems were chosen to represent the distribution of small system characteristics found at the national level, as described in Section 2.3. Occurrence findings for these 800 systems, consequently, are representative of occurrence at the 60,414 small systems operating nationally. Moreover, the 2.7 million persons served by the 800 sampled systems are representative of the over 45 million served by all small systems nationally.

In order to better compare contaminant occurrence measured in the small system sample to that of the large system census, the number of small systems (and population served by those systems) is extrapolated to the national level. These extrapolations are presented in summary tables in Section 6. To calculate the extrapolations, the percent of systems (or population served) at each source water-size category was multiplied times the total number of systems found nationally in the same source water-size category (see Exhibit 4.2.3). Estimates of national system and population-served numbers were taken from the "Drinking Water Baseline Handbook, Fourth edition" (USEPA, 2003c).

For the Stage 1 estimates, the extrapolations are calculated for each category of small systems (source water type/system size stratum) and are then summed to yield a single national total for all small systems. In contrast, the extrapolation for the Stage 2 estimates is calculated (statistically modeled) directly for the "total" estimate for all small systems (i.e., extrapolations for individual categories are not summed to generate the total.) Extrapolations are conducted differently for the Stage 2 results because the Stage 2 modeling provides better estimates when all data points are included. Extrapolations provide the best available estimate of contaminant occurrence in small systems on a nationwide scale.

Exhibit 4.2.3 illustrates the calculation of Stage 1 estimates of national contaminant occurrence, using DCPA degradates as an example. To estimate the number of ground water systems serving 500 people or less nationally expected to have detections of DCPA degradates, the percentage of systems of that description with detections in UCMR 1 (0.9%) is multiplied by the total number of ground water systems nationally that serve 500 people or less (41,415 systems). The result is an estimate of 373 systems (41,415 x 0.009 = 373). A similar process is used to estimate the population served nationally by systems in that category, and to make the corresponding extrapolations in each of the other five system type / system size categories. Then the Stage 1 extrapolations are summed to yield a single national total for all small systems.

Exhibit 4.2.3: Calculating National Estimates (Extrapolations) Using DCPA Degradates Stage 1 Occurrence Findings

Water Type	System Size by Population Served	National Inventory		DCPA Degradates ≥ MRL		National Estimate	
		Systems	Population	Systems	Population	Systems	Population
Ground Water	≤ 500	41,415	6,231,348	0.9%	1.8%	373	113,000
	501 - 3,300	12,128	15,602,332	1.2%	1.1%	149	166,000
	3,301 - 10,000	2,529	14,390,656	5.1%	5.5%	130	795,000
	Total	**56,072**	**36,224,336**	**2.7%**	**4.5%**	**652**	**1,074,000**
Surface Water	≤ 500	1,639	306,256	0.0%	0.0%	0	0
	501 - 3,300	1,659	2,674,107	2.2%	1.6%	37	44,000
	3,301 - 10,000	1,044	6,209,891	0.0%	0.0%	0	0
	Total	**4,342**	**9,190,254**	**0.5%**	**0.2%**	**37**	**44,000**
All Small Systems		**60,414**	**45,414,590**	**2.1%**	**3.2%**	**689**	**1,118,000**

4.2.4 Stage 1 Analyses and the Statistically-Weighted Sample of Small Systems

The Stage 1 occurrence results presented in this report are simple, non-parametric, descriptive statistics based directly upon the UCMR 1 occurrence data. The approximately 800 small systems that conducted UCMR 1 monitoring and provided the occurrence data used in this report were selected as a statistically-weighted (primarily population-weighted) stratified sample. For several reasons, the occurrence findings presented here do not incorporate adjustments for the statistically-weighted sample selection of the UCMR 1 small systems. For the three contaminants with more than one analytical detection (the two DCPA degradates, reported in aggregate, and MTBE), occurrence rates are higher in large systems than in small systems. This large-system predominance is even greater when considered on a population-served basis. Therefore, adjusting the occurrence findings to account for the statistically-weighted sample of small systems would not be anticipated to significantly affect the occurrence findings presented here. However, a sensitivity analysis was conducted on the 800 small systems to address this issue.

The sensitivity analysis compared weighted and non-weighted mean population exposed based on various detection rates.[15] At each detection level, a number of systems was randomly selected without replacement (8 systems selected under the 1% detection rate scenario, 16 selected at 2% detection rate, 24 at 3%, etc., to 80 systems at 10%, and 400 systems at 50% detection rate). Weighted and non-weighted mean population-exposed values were calculated for each system. In systems with no detections, the population exposed was set at zero. Weighted and non-weighted means were then derived and compared using two-sample t-tests

[15] This analysis was conducted independent of any particular contaminant. The aim was to determine whether or not weighting made any difference (related to the mean population exposed) if there is x % of detections in the data. The sensitivity analysis findings are applicable to all contaminants.

assuming both equal and unequal variances.[16] At every single detection level, there was no significant statistical difference between estimates of the weighted and unweighted means. Additionally, weighted and non-weighted mean population-exposed values were compared at a 100% detection rate (i.e., a hypothetical scenario assuming detection of a contaminant at all 800 systems. Again, it was determined that the weighting did not significantly change population means overall. For more details on this sensitivity analysis, please refer to Appendix F.

4.3 Sample-Point-Level Analyses

The basic Stage 1 analytical methodology is a conservative approach: occurrence measures are based on simple counts of whether or not a PWS has at least one sample analytical result greater than a specified concentration threshold. This is roughly analogous to a measure based conservatively on peak contaminant occurrence (i.e., when a system's occurrence is represented by the maximum sample value even if numerous other samples collected by the system had lower concentrations or were non-detections). The approach incorporates another conservative assumption that if a detection is found in a single entry (or sampling) point in a system, then the entire population served by the system is exposed to the detected contaminant (i.e., even if there are other entry points with no detections that might dilute the concentration found in the single entry point sample). For example, if a PWS serves a population of 10,000 and found a detection of a UCMR 1 contaminant in one out of its two sampling points on one occasion, the Stage 1 analytical methodology would estimate that the entire population served by the system (10,000) was potentially exposed to the maximum detected levels of the contaminant.

In reality, many systems get water from multiple water sources (such as a mix of purchased and non-purchased water, ground water and surface water, etc.). In systems with multiple water sources or water intakes, contaminant occurrence in one source or entry point does not necessarily mean occurrence in all sources or entry points that distribute water to consumers. Given the detailed sample point information in the UCMR 1 data, additional Stage 1 analyses are conducted at the sample-point-level to provide additional details of contaminant occurrence. Sample-point-level occurrence measures include: the number and percentage of systems with analytical detections at two or more sample points, the number and percentage of systems with two or more analytical detections at a single sample point, and a "proportional population" occurrence assessment.

Systems were generally required to collect UCMR 1 samples at the entry points to the distribution system (EP). Systems in some States, such as California and New York, were allowed to collect source water (SR) samples for the UCMR 1 in a manner consistent with those States' approved compliance monitoring sample locations and protocol. Source water samples could also be collected in other States at (ground water) systems that have no treatment facilities. Various occurrence analyses at the sample-point-level (which includes EPs and SRs) are possible based on the occurrence and system inventory data that are available. This section presents the following types of sample-point-level analysis

[16] A two-sample t-test is conventionally used to test if an estimate (usually a mean) from one sample is statistically different from the mean of another sample. It assumes that the two samples being tested are independent of each other. Because there is no conventional way to test equality of means of the same sample with and without weights, independence of the sample with and without weights was assumed.

Two Detections at One Sample Point (2D1SP)

The count of "2D1SP" identifies public water systems that have at least two analytical detections at any single sample point in the system. By counting individual sample points with at least two separate detections, the analysis provides an indication of persistent or recurring contaminant occurrence over time at the particular sampling point location within the system.

In the 2D1SP analysis, if a system is identified with two or more detections at a sample point, the maximum detected concentration is used in the analysis to estimate potential exposure for the population served by that system.

One Detection at Two Sample Points (1D2SP)

Another sample-point-level analysis is an assessment of systems with at least one analytical detection at two or more sample points. This measure addresses the distribution of a contaminant's occurrence throughout a system. Similarly, the percentage of a system's sampling point locations (EPs and/or SRs) that have one or more detections of the contaminant can be measured. As in the 2D1SP analysis, the maximum detected concentration is used in the analysis for estimating potential exposure for the population served by that system.

Note that when reviewing the percentage of systems with detections in two or more sampling points, many UCMR 1 systems have only one sample point and thus must be discounted. Approximately 1,861 systems (roughly half of all UCMR 1 systems) sampled only at one sample point. By size category, 62% of all small systems and 44% of all large systems sampled only at one sample point.

Proportional Populations

This occurrence measure is a less conservative estimate of the population served by a system with a contaminant detection. To derive this less conservative, sample-point-level measure, an assumption was necessary regarding populations served by individual entry points at drinking water systems. Because the population served by each entry point is not known, EPA assumed that the total population served by a particular system is equally distributed across all entry (sampling) points. Therefore, the population served by an entry point with a detection of a particular contaminant is calculated by multiplying the system's total population served by the percentage of that PWS's sampling points with a contaminant detection. For example, if a PWS serves a population of 30,000 and found detections of a UCMR 1 contaminant in one out of its two sampling points, then a population of 15,000 (30,000 x ½, or 50%) would be estimated to be potentially exposed to the contaminant.

As detailed as the UCMR 1 data are, no information is available on the exact populations served by each sample point within a system. (This information is also not available in the SDWIS/Fed database.) Therefore, the proportional population estimate is based on the assumption that for every system, each sample point serves an equal portion of the system's total population. How well this assumption reflects actual populations potentially exposed to contaminant occurrence will depend on the distribution system and service population configurations at individual systems. Also, the national extrapolations of the sample point

analyses assume that the sample points (contained in the statistical sample of small systems) are nationally representative. This may not be the case since the UCMR 1 statistical design addressed small systems, not small system sample points. However, for all practical purposes, the national extrapolations of the small system sample point analyses are considered good approximations of national occurrence since any effects on occurrence due to the difference of system versus sample point representativeness should be minimal, particularly since large system occurrence for DCPA degradates and MTBE tends to dominate over small system occurrence (especially when measuring populations-served by systems).

An example can illustrate the differences between 2D1SP, 1D2SP, and proportional population occurrence measures of potential exposure. Consider the case of a large PWS that has four entry points to the distribution systems (4 UCMR 1 sample points) and serves a population of 100,000. In this example, the PWS has two detections of a contaminant in one of its four sample points (i.e., 25% of its sample points). The 2D1SP measure would estimate that the entire population served by the system (100,000) was potentially exposed to detection levels of the contaminant (because there is at least two detections in 1 sample point). The 1D2SP measure would estimate no exposure to the contaminant at this system (exposure is defined by this measure as a situation where two or more sample points at a PWS are identified with detections). The proportional population approach would estimate that a population of 25,000 was potentially exposed to the contaminant (because 1 of 4 sample points, or 25%, were identified with detections, and 25% of the PWS total population served is 25,000). These various measures are presented to enable a broader consideration of occurrence and potential exposure. Results of all three sample point analyses are presented for select contaminants (those with multiple analytical detections) in Section 7.

5. Description of Stage 2 Analytical Methodology

EPA's two-stage analytical approach uses the occurrence estimates derived from the Stage 1 analyses to determine if a more rigorous statistical analysis, the Stage 2 analysis, is warranted. Stage 2 analyses are conducted when the Stage 1 findings indicate significant contaminant occurrence at or near the HRL for any particular contaminant. The Stage 2 analytical approach employs probabilistic modeling to estimate system mean contaminant concentrations and the percent of systems with means exceeding specified contaminant concentration thresholds. This enables, for example, a direct estimate of the number of systems (and population served by those systems) with mean concentrations greater than an HRL. The probabilistic model used, a Bayesian-based hierarchical model, was initially developed and peer-reviewed for use in occurrence estimations conducted for the first Six-Year Review of NPDWRs (see USEPA, 2003a).

The Stage 2 probabilistic model was developed as part of the two-stage analytical approach for use and consistency across various occurrence assessment projects for the Office of Ground Water and Drinking Water. The Stage 2 analysis generates an estimated number of systems with an annual (or longer-term) mean contaminant concentration exceeding a specified threshold, and includes measures of uncertainty (corresponding confidence intervals based on calculated standard errors). The Stage 2 model includes confidence intervals around each mean, enables estimates of mean contaminant concentrations below the MRL, and directly uses non-detections (censored data) in estimating systems' mean concentrations (so therefore can generate contaminant occurrence estimates even when a high proportion of non-detection data are present). The model was used to generate the contaminant occurrence estimates for 60 regulated contaminants for the first Six-Year Review of NPDWRs. For a more detailed, technical description of the Stage 2 analysis and model, please refer to Appendix B.

The use of the Bayesian-based probabilistic model with the UCMR 1 data has also been peer-reviewed. This model can be directly used with the UCMR 1 large system (census) occurrence data. For use with the UCMR 1 small system sample data, weighting adjustments are added to the model so that model estimates generated account for the UCMR 1 statistically-weighted sample of small systems.

EPA did not need to perform Stage 2 analysis on any of the contaminants evaluated in this report because none of the contaminants occurred at or above their respective HRLs and/or the contaminants may potentially have acute (rather than chronic) effects such that Stage 2 would not have been appropriate.[17] However, to fully illustrate the two-stage occurrence analysis approach, a Stage 2 analysis is conducted on the DCPA degradates. Summary results of this analysis are presented in Section 7 of this report and the detailed DCPA degradate occurrence findings generated by the Stage 2 analysis are presented in Appendix C.

[17] Stage 2 analyses provide occurrence information that is more reflective of potential chronic exposure.

6. Stage 1 Occurrence Estimates

This section presents summary occurrence findings for the ten CCL 2 contaminants monitored under UCMR 1. The following exhibits, evaluated together with the other analytical and graphical results included within this report (and report appendices), provide a multi-faceted overview of the frequency, degree, and distribution of the occurrence of those contaminants. The results presented here are Stage 1 analyses of the UCMR 1 data. Note that many of the summary tables included in this section of the report do not present a full breakdown of results by system size category; for that level of detail, please refer to Appendix G. Additionally, brief summaries of the occurrence findings for the other 16 UCMR 1 contaminants (i.e., those not being considered during CCL 2 regulatory determinations) are included in Appendix A. Results of the example Stage 2 analysis for DCPA degradates are presented in Section 7, and graphical assessments of occurrence distribution are presented in Section 8.

In many of the following exhibits (as well as those in Section 8 and the Appendices), numbers of detections in small and large systems are combined for summary purposes. It is important to note, however, that while these combined small and large system summaries accurately present actual UCMR 1 monitoring results (such as the percent of systems with detections), the total number of systems with detections does not accurately represent national occurrence. Because UCMR 1 small system data were collected from a representative sample of small systems, these data must be extrapolated to generate estimates of national occurrence (see Section 4.2.3). Those exhibits that do include extrapolated small system data are clearly identified.

Summary tables of basic occurrence information on all ten CCL 2 contaminants are presented in Exhibits 6.a and 6.b. (Exhibit 6.a presents a breakdown of the occurrence data by system size, while Exhibit 6.b presents a breakdown by source water type.) Five out of the ten contaminants (1,3-dichloropropene, 2,6-dinitrotoluene, EPTC, fonofos, and terbacil) had no analytical detections in any of the large or small systems that sampled under the UCMR 1. Two of the ten contaminants (DDE and 2,4-dinitrotoluene) had only a single detection while another three contaminants (DCPA degradates, reported in aggregate, and MTBE) had multiple detections in small and large systems. The maximum concentrations of DCPA degradates and MTBE detected were 190 µg/L and 49 µg/L, respectively. Overall, system detection rates (percentage of PWSs with at least one analytical detection) were 4.57% for DCPA degradates and 0.49% for MTBE.

Summaries of sample-point-level results (as opposed to sample-level or system-level results) are also included in Section 6. These analyses were only conducted for the three CCL 2 contaminants with multiple detections (DCPA degradates and MTBE). Note that only the national extrapolation values are presented for the small systems, not the actual, raw numerical counts from the UCMR 1 data set. For more detailed sample-point-level tables presenting occurrence findings (including raw counts of sample-point-level detections at small systems), please refer to Appendix H.

Exhibit 6.a: Stage 1 Summary of UCMR 1 Occurrence of Ten CCL 2 Contaminants Monitored Under UCMR 1 (by System Size)

Contaminant	System Size	Sample Level			System-level			Concentrations of Analytical Detections (in μg/L)			
		Number of Samples	Detections		Number of Systems Sampled	Systems with ≥ 1 Detection(s)					
			Number	Percent		Number	Percent	Minimum	Median	99th %	Maximum
DCPA mono & di-acid degradates	Small	3,272	38	1.16%	797	17	2.13%	1	2	190	190
	Large	30,638	738	2.41%	3,079	160	5.20%	1	2	16	39
	All (Small + Large)	33,910	776	2.29%	3,876	177	4.57%	1	2	19	190
4,4-DDE	Small	3,251	--	--	797	--	--	--	--	--	--
	Large	30,546	1	< 0.01%	3,077	1	0.03%	3	3	3	3
	All (Small + Large)	33,797	1	< 0.01%	3,874	1	0.03%	3	3	3	3
1,3-dichloropropene	Small	3,719	--	--	796	--	--	--	--	--	--
	Large	0	--	--	0	--	--	--	--	--	--
	All (Small + Large)	*3,719*	--	--	*796*	--	--	--	--	--	--
2,4-dinitrotoluene	Small	3,251	--	--	797	--	--	--	--	--	--
	Large	30,513	1	< 0.01%	3,076	1	0.03%	333	333	333	333
	All (Small + Large)	33,764	1	< 0.01%	3,873	1	0.03%	333	333	333	333
2,6-dinitrotoluene	Small	3,251	--	--	797	--	--	--	--	--	--
	Large	30,514	--	--	3,076	--	--	--	--	--	--
	All (Small + Large)	33,765	--	--	3,873	--	--	--	--	--	--
EPTC	Small	3,251	--	--	797	--	--	--	--	--	--
	Large	30,547	--	--	3,076	--	--	--	--	--	--
	All (Small + Large)	33,798	--	--	3,873	--	--	--	--	--	--
Fonofos	Small	643	--	--	178	--	--	--	--	--	--
	Large	1,663	--	--	117	--	--	--	--	--	--
	All (Small + Large)	2,306	--	--	295	--	--	--	--	--	--
MTBE	Small	3,268	3	0.09%	796	3	0.38%	6	13	49	49
	Large	30,500	23	0.08%	3,075	16	0.52%	5	9	48	48
	All (Small + Large)	33,768	26	0.08%	3,871	19	0.49%	5	9	49	49
Terbacil	Small	3,251	--	--	797	--	--	--	--	--	--
	Large	30,549	--	--	3,076	--	--	--	--	--	--
	All (Small + Large)	33,800	--	--	3,873	--	--	--	--	--	--

While the combined small and large system summary numbers in this table accurately present actual UCMR 1 monitoring results (e.g., percent of systems with detections), the total number of systems with detections does not accurately represent national occurrence. The statistical sample of small UCMR 1 systems must be extrapolated to generate estimates of national occurrence (see Section 4.2.3). NOTE: "--" indicates no result (no detection of contaminant).

Exhibit 6.b: Stage 1 Summary of UCMR 1 Occurrence of Ten CCL 2 Contaminants Monitored Under UCMR 1 (by Source Water Type)

Contaminant	Source Water Type	Sample-level			System-level			Concentrations of Analytical Detections (in μg/L)			
		Number of Samples	Detections		Number of Systems Sampled	Systems with ≥ 1 Detection(s)					
			Number	Percent		Number	Percent	Minimum	Median	99th %	Maximum
DCPA mono & di-acid degradates	GW	18,451	524	2.84%	1,979	125	6.32%	1	2	16	190
	SW	15,459	252	1.63%	1,897	52	2.74%	1	2	24	39
	All (GW + SW)	33,910	776	2.29%	3,876	177	4.57%	1	2	19	190
DDE	GW	18,256	1	0.01%	1,971	1	0.05%	3	3	3	3
	SW	15,541	--	--	1,903	--	--	--	--	--	--
	All (GW + SW)	33,797	1	< 0.01%	3,874	1	0.03%	3	3	3	3
1,3-Dichloropropene	GW	2,556	--	--	589	--	--	--	--	--	--
	SW	1,163	--	--	207	--	--	--	--	--	--
	All (GW + SW)	3,719	--	--	796	--	--	--	--	--	--
2,4-Dinitrotoluene	GW	18,286	--	--	1,970	--	--	--	--	--	--
	SW	15,478	1	0.01%	1,903	1	0.05%	333	333	333	333
	All (GW + SW)	33,764	1	< 0.01%	3,873	1	0.03%	333	333	333	333
2,6-Dinitrotoluene	GW	18,288	--	--	1,970	--	--	--	--	--	--
	SW	15,477	--	--	1,903	--	--	--	--	--	--
	All (GW + SW)	33,765	--	--	3,873	--	--	--	--	--	--
EPTC	GW	18,289	--	--	1,970	--	--	--	--	--	--
	SW	15,509	--	--	1,903	--	--	--	--	--	--
	All (GW + SW)	33,798	--	--	3,873	--	--	--	--	--	--
Fonofos	GW	1,263	--	--	164	--	--	--	--	--	--
	SW	1,043	--	--	131	--	--	--	--	--	--
	All (GW + SW)	2,306	--	--	295	--	--	--	--	--	--
MTBE	GW	18,265	20	0.11%	1,970	15	0.76%	5	8	49	49
	SW	15,503	6	0.04%	1,901	4	0.21%	8	9	33	33
	All (GW + SW)	33,768	26	0.08%	3,871	19	0.49%	5	9	49	49
Terbacil	GW	18,276	--	--	1,970	--	--	--	--	--	--
	SW	15,524	--	--	1,903	--	--	--	--	--	--
	All (GW + SW)	33,800	--	--	3,873	--	--	--	--	--	--

While the combined small and large system summary numbers in this table accurately present actual UCMR 1 monitoring results (e.g., percent of systems with detections), the total number of systems with detections does not accurately represent national occurrence. The statistical sample of small UCMR 1 systems must be extrapolated to generate estimates of national occurrence (see Section 4.2.3). NOTE: "--" indicates no result (no detection of contaminant).

6.1 DCPA Mono- and Di-Acid Degradates

UCMR 1 monitoring identified 776 analytical detections of the DCPA degradates (i.e., at or above the MRL of 1 µg/L) in 33,910 samples collected. DCPA degradates appear to have a relatively wide occurrence in both ground water and surface water drinking sources (Exhibit 6.1.a), as evidenced by the relatively high percentage of samples and PWSs with analytical detections. UCMR 1 monitoring found DCPA degradate detections at 177 PWSs located in 24 States and 1 Territory. DCPA degradates were found to occur in ground water PWSs at a rate approximately three times that in surface water PWSs, and to occur in large systems at a rate approximately two times that in small systems regardless of source water type. The percentage of all (large and small) UCMR 1 systems with at least one detection of DCPA degradates was 4.57%. The average value among DCPA degradate detections was 3.48 µg/L and the median value was 2.00 µg/L.

DCPA degradate occurrence was also measured relative to the ½ HRL (35 µg/L) and HRL (70 µg/L) (Exhibits 6.1.b and 6.1.c). While DCPA degradate occurrence was relatively widespread, the degree of occurrence (the typical concentration levels found) was low. Only two PWSs (one small system and one large system) detected concentrations greater than the ½ HRL, and only one small PWS detected concentrations greater than the HRL. Extrapolating these findings suggests that an estimated 12.3 million persons are served by systems with detections of DCPA degradates nationally, while only an estimated 113,000 are served by systems with DCPA degradate concentrations greater than the HRL. (See Section 4 for an explanation of small system national extrapolations.)

DCPA degradate data were collected and reported by 797 (99.6% of) small PWSs with 100% of the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfy data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in the extrapolated estimate of national occurrence at small systems.

DCPA degradate data were collected by 3,079 (99.3% of) large PWSs with 98.8% of the large system data determined to be acceptable based on the data quality criteria. The large system census is therefore slightly incomplete (with a system non-response rate of 0.7%). Sixteen of the 21 large systems not reporting UCMR 1 results (the "non-responsive systems") were from the "large" size category (serving between 10,001 and 50,000 people), and 5 systems were from the "very large" size category (serving over 50,000 people). There were nearly an equal number of ground water and surface water non-responsive systems. The State with the greatest number of large systems that were non-responsive for DCPA degradates was Louisiana (7 of the 21 non-responsive systems). Of the 55 large and very large PWSs in Louisiana that did provide DCPA degradate data, none found any detections of DCPA degradates. (Nationally, 5.20% of large and very large systems found DCPA degradate detections.) The non-response rate is very slightly higher when assessed on a potential exposure (population-served) basis: Of the total population served by all eligible UCMR 1 large systems, approximately 0.9% is served by the 21 non-responsive systems. If any of these non-responsive systems actually had DCPA degradates in their water, the UCMR 1 national occurrence results would underestimate actual occurrence at large systems. The maximum value (upper bound) of the potential underestimation of population-served by large systems with potential DCPA degradates is 0.9%.

Exhibit 6.1.a: Summary of Stage 1 Occurrence Measures of DCPA Mono-and Di-Acid Degradates

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,345	37	1.58%	590	16	2.71%	12	2.03%
SW	927	1	0.11%	207	1	0.48%	0	0.00%
All	3,272	38	1.16%	797	17	2.13%	12	1.51%
Large Systems (Census)								
GW	16,106	487	3.02%	1,389	109	7.85%	74	5.27%
SW	14,532	251	1.73%	1,690	51	3.02%	41	2.43%
All	30,638	738	2.41%	3,079	160	5.20%	115	3.73%
All Systems								
Total Water Systems[1]	33,910	776	2.29%	3,876	177	4.57%	127	3.28%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

Exhibit 6.1.b: National Extrapolation of Stage 1 Occurrence Measures of DCPA Mono- and Di-Acid Degradates in Small PWSs

Water Type	System Size by Population Served	Total Number		Detections (≥ MRL) [1]						Detections (> ½ HRL) [1]						Detections (> HRL) [1]					
				UCMR 1		Percentage		National Extrapolation		UCMR 1		Percentage		National Extrapolation		UCMR 1		Percentage		National Extrapolation	
		Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop
Small Systems																					
GW	≤ 500	111	27,599	1	500	0.90%	1.81%	373	113,000	1	500	0.90%	1.81%	373	113,000	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	3	4,692	1.22%	1.06%	149	166,000	--	--	--	--	--	--	--	--	--	--	--	--
	3,301 - 10,000	234	1,470,717	12	81,241	5.13%	5.52%	130	795,000	--	--	--	--	--	--	--	--	--	--	--	--
	Total	590	1,939,815	16	86,433	2.71%	4.46%	652	1,074,000	1	500	0.17%	0.03%	373	113,000	1	500	0.17%	0.03%	373	113,000
SW	**≤ 500**	**52**	**16,662**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	501 - 3,300	45	91,723	1	1,500	2.22%	1.64%	37	44,000	--	--	--	--	--	--	--	--	--	--	--	--
	3,301 - 10,000	110	712,370	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Total	207	820,755	1	1,500	0.48%	0.18%	37	44,000	--	--	--	--	--	--	--	--	--	--	--	--
All Small Systems		797	2,760,570	17	87,933	2.13%	3.19%	689	1,118,000	1	500	0.13%	0.02%	373	113,000	1	500	0.13%	0.02%	373	113,000

NOTE: "--" indicates no result (no systems, or population served by systems, with detections).

[1] MRL for DCPA degradates is 1 μg/L and the HRL is 70 μg/L.

Exhibit 6.1.c: Stage 1 National Occurrence Measures of DCPA Mono- and Di-Acid Degradates Based on UCMR 1 Small System Extrapolated Data and Large System Census Data

Water Type	System Size by Population Served	Detections (≥ MRL) [1]				Detections (> ½ HRL) [1]				Detections (> HRL) [1]			
		Number		Percentage		Number		Percentage		Number		Percentage	
		Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop
Small Systems													
Ground Water	≤ 500	373	113,000	0.90%	1.81%	373	113,000	0.90%	1.81%	373	113,000	0.90%	1.81%
	501 - 3,300	149	166,000	1.22%	1.06%	--	--	--	--	--	--	--	--
	3,301 - 10,000	130	795,000	5.13%	5.52%	--	--	--	--	--	--	--	--
	Total	652	1,074,000	2.71%	4.46%	373	113,000	0.17%	0.03%	373	113,000	0.17%	0.03%
Surface Water	≤ 500	--	--	--	--	--	--	--	--	--	--	--	--
	501 - 3,300	37	44,000	2.22%	1.64%	--	--	--	--	--	--	--	--
	3,301 - 10,000	--	--	--	--	--	--	--	--	--	--	--	--
	Total	37	44,000	0.48%	0.18%	--	--	--	--	--	--	--	--
All Small Systems		689	1,118,000	2.13%	3.19%	373	113,000	0.13%	0.02%	373	113,000	0.13%	0.02%
Large Systems													
Ground Water	10,001 - 50,000	87	2,095,370	7.26%	7.74%	--	--	--	--	--	--	--	--
	> 50,000	22	3,987,609	11.58%	15.06%	--	--	--	--	--	--	--	--
	Total	109	6,082,979	7.85%	11.36%	--	--	--	--	--	--	--	--
Surface Water	10,001 - 50,000	34	1,136,909	2.87%	3.41%	--	--	--	--	--	--	--	--
	> 50,000	17	4,049,548	3.35%	2.99%	1	738,337	0.20%	0.55%	--	--	--	--
	Total	51	5,186,457	3.02%	3.07%	1	738,337	0.06%	0.44%	--	--	--	--
All Large Systems		160	11,269,436	5.20%	5.07%	1	738,337	0.03%	0.33%	--	--	--	--
All Systems (National Extrapolation plus Census)													
Total Water Systems		**849**	**12,387,436**	**4.57%**	**5.05%**	**374**	**851,337**	**0.05%**	**0.33%**	**373**	**113,000**	**0.03%**	**< 0.01%**

NOTE: "--" indicates no result (no systems, or populations served by systems, with detections).

[1] MRL for DCPA degradates is 1 μg/L and the HRL is 70 μg/L.

Exhibit 6.1.d presents a summary of the sample-point-level analysis of DCPA degradate occurrence. Incorporating small system national extrapolations, almost 3% of all PWSs, serving 3.6% of the total population, are estimated to have multiple detections of DCPA degradates at a single sampling point. A slightly smaller percentage of PWSs and population served nationally is estimated to have DCPA degradate detections at multiple sampling points. Using another measure of occurrence, the sampling point (SP) proportional population, it is estimated that approximately 1.4% of the population served by PWSs nationally is served by an entry point/sample point with detections of DCPA degradates. (This proportional population served by sample points with detections, a less conservative measure of occurrence, is calculated by multiplying a PWS's total population served by the percentage of that PWS's sampling points with a contaminant detection. Refer to Section 4.3 for more details regarding the proportional population analysis.)

Exhibit 6.1.d: Summary of Sample-Point-Level Occurrence Measures of DCPA Mono- and Di-Acid Degradates Based on UCMR 1 Small System Extrapolated Data and Large System Census Data

Water Type	Total			At Least 2 Detections at 1 SP				At Least 1 Detect at 2 SPs				SP Proportional Population With At Least One Detection			
	Sys	SPs	Pop	Systems		Population		Systems		Population		SPs [1]		Population [2]	
				#	%	#	%	#	%	#	%	#	%	#	%
Small Systems															
GW	590	1,211	1,939,815	558	1.86%	727,000	2.86%	93	0.85	346,000	1.51%	843	1.90%	554,000	1.90%
SW	207	243	820,755	0	0.00%	0	0.00%	0	0.00%	0	0.00%	46	0.41%	44,000	0.18%
All	797	1,454	2,760,570	558	1.38%	727,000	2.01%	93	0.63%	346,000	1.06%	889	1.65%	598,000	1.39%
Large Systems															
GW	1,389	8,241	53,537,353	66	4.75%	4,363,000	8.15%	56	4.03%	3,931,000	7.34%	300	3.64%	1,465,000	2.74%
SW	1,690	5,284	168,728,855	36	2.13%	3,649,000	2.16%	25	1.48%	3,422,000	2.03%	125	2.37%	1,584,000	0.94%
All	3,079	13,525	222,266,208	102	3.31%	8,011,000	3.60%	81	2.63%	7,353,000	3.31%	425	3.14%	3,049,000	1.37%
All Small plus Large Systems															
All Systems	3,876	14,979	225,026,778	660	2.92%	8,738,000	3.58%	174	2.22%	7,699,000	3.28%	1,314	3.00%	3,647,000	1.37%

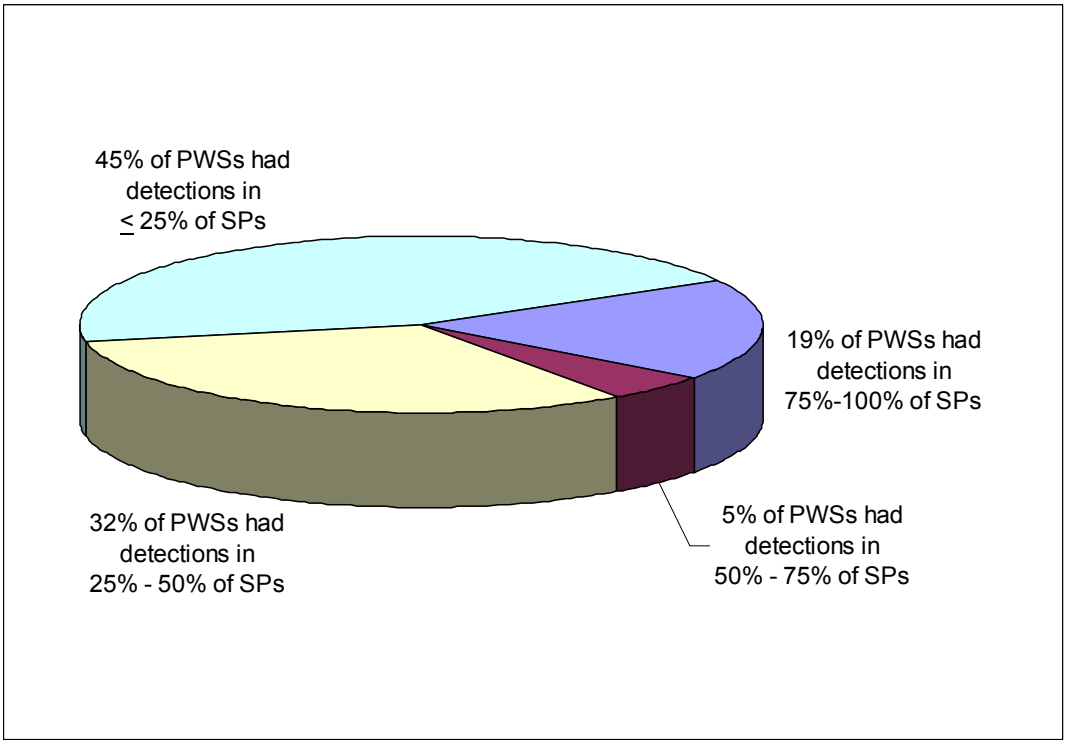
All Population values are rounded to the nearest thousand.

[1] The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. (The average number of sampling points per system was obtained from the Community Water System Survey 2000, Volume II Detailed Tables and Survey Methodology.) The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

[2] Sample point proportional population was calculated by multiplying each system's total population served by the percentage of that PWS's sampling points found with a contaminant detection.

Most UCMR 1 systems have multiple SPs, and DCPA degradates may not be present in all SPs at a system (even if one or more SPs at a system does have DCPA degradate occurrence). Exhibit 6.1.e illustrates the proportion of systems detecting the DCPA degradates in various percentages of their SPs. Fifty-five (55) percent of systems with DCPA degradate detections had detections in more than 25% of their SPs, and 22% of systems with detections had detections in more than 50% of their SPs. (Note that for all UCMR 1 systems with DCPA degradate detections, 9.1% had only 1 SP.)

Exhibit 6.1.e: Percentage of SPs with Detections of DCPA Mono- and Di-Acid Degradates (Among Systems with At Least One Detection)



6.2 DDE

DDE was only detected (at or above the MRL of 0.8 µg/L) in one sample in all of the UCMR 1 sampling (see Exhibit 6.2). The single detection of 3 µg/L was in a ground water sample in Alabama. The population served by this large system was 17,670, which thus also represents the total estimated national population served by systems with detectable levels of DDE. The overall occurrence rate of DDE in all public water systems that participated in UCMR 1 monitoring is 0.03%.

DDE data were collected and reported by 797 (99.6% of) small PWSs, with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high proportion of acceptable data satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that DDE is not likely to be present in the nation's small systems).

DDE data were collected by 3,077 (99.3% of) large PWSs with 98.2% of the large system data determined to be acceptable based on the data quality QA/QC. The large system census is therefore slightly incomplete, with a system non-response rate of 0.7%. Eighty-seven percent of the 23 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people); the remaining 13% were from the "very large" size category (serving over 50,000 people). Seventy-eight percent of the non-responsive systems were served by ground water. The State with the greatest number of large systems that were non-responsive for DDE was Louisiana (12 of the 23 non-responsive systems). The non-response rate is smaller when assessed on a potential exposure (population served) basis. Of the total population served by all eligible UCMR 1 large systems, approximately 0.4% is served by the 23 non-responsive systems. If any of these non-responsive systems actually had DDE in their water, the UCMR 1 national results would underestimate actual occurrence at large systems. The maximum value (upper bound) of the potential underestimation of the population-served by large systems with detections of DDE is 0.4%.

Because the HRL for DDE (0.2 µg/L) is lower than the MRL used for monitoring (0.8 µg/L), EPA used the MRL value for formal evaluation of occurrence and exposure assessments. The MRL is within the 10^{-4} to the 10^{-6} cancer risk range for DDE.[18]

[18] When EPA specified the analytical methods and the MRL for the monitoring of DDE in UCMR 1, the Agency chose an MRL that was within the capabilities of the most commonly used methods for drinking water laboratories at that time. The DDE MRL of 0.8 µg/L is within the 10^{-4} to the 10^{-6} cancer risk range, which is considered an acceptable range by the Agency for occurrence evaluation of carcinogens.

Exhibit 6.2.a: Summary of Stage 1 Occurrence Measures of DDE

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,342	0	0.00%	590	0	0.00%	0	0.00%
SW	909	0	0.00%	207	0	0.00%	0	0.00%
All	3,251	0	0.00%	797	0	0.00%	0	0.00%
Large Systems (Census)								
GW	15,914	1	0.01%	1,381	1	0.07%	0	0.00%
SW	14,632	0	0.00%	1,696	0	0.00%	0	0.00%
All	30,546	1	<0.01%	3,077	1	0.03%	0	0.00%
All Systems								
Total Water Systems[1]	33,797	1	<0.01%	3,874	1	0.03%	0	0.00%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

6.3 1,3-Dichloropropene

1,3-Dichloropropene was not detected at or above the MRL of 0.05 µg/L in any of the 3,719 samples for which it was tested (see Exhibit 6.3). 1,3-Dichloropropene was monitored and reported by a total of 796 (99.5% of) small PWSs with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence. (In this case, the data indicate that 1,3-dichloropropene is not likely to be present in the nation's small systems.) Of the 796 PWSs, 589 relied on ground water sources and 207 on surface water sources.

1,3-Dichloropropene was not officially on the UCMR 1 monitoring list, but was added as an extra contaminant for monitoring by the participating small systems; UCMR 1 large systems did not monitor for 1,3-dichloropropene. Note that although the HRL for 1,3-dichloropropene (0.4 µg/L) is lower than the MRL used for monitoring (0.5 µg/L), the MRL is within the 10^{-4} to the 10^{-6} cancer risk range for 1,3-dichloropropene.[19]

Exhibit 6.3: Summary of Stage 1 Occurrence Measures of 1,3-Dichloropropene

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,556	0	0.00%	589	0	0.00%	0	0.00%
SW	1,163	0	0.00%	207	0	0.00%	0	0.00%
All	3,719	0	0.00%	796	0	0.00%	0	0.00%

[19] When EPA specified the analytical methods and the MRL for the monitoring of 1,3-dichloropropene in UCMR 1, the Agency chose an MRL that was within the capabilities of the most commonly used methods for drinking water laboratories at that time. The 1,3-dichloropropene MRL of 0.5µg/L is within the 10^{-4} to 10^{-6} cancer risk range, which is considered an acceptable risk range by the Agency for occurrence analyses for carcinogens.

6.4 2,4-Dinitrotoluene

2,4-Dinitrotoluene (2,4-DNT) was detected (at or above the MRL of 2 µg/L) in only one sample in all of the UCMR 1 sampling (Exhibit 6.4). This single detection of 333 µg/L was in a surface water sample taken from an entry point source at a large system in the State of Tennessee. The population served by this system was 37,811, which thus also represents the total estimated national population served by systems with detections of 2,4-dinitrotoluene. The overall occurrence rate of 2,4-dinitrotoluene in all public water systems that participated in UCMR 1 monitoring is 0.03%. This single detection concentration was above the HRL (0.05 µg/L) for 2,4-dinitrotoluene.

2,4-DNT data were collected and reported by 797 (99.6% of) small PWSs with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that 2,4-DNT is not likely to be present in the nation's small systems).

2,4-DNT data were collected by 3,076 (99.2% of) large PWSs with 98.8% of large system data determined to be acceptable based on data quality QA/QC criteria. The large system census is therefore slightly incomplete, with a system non-response rate of 0.8%. Eighty-eight percent of the 24 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people); the remaining systems were from the "very large" size category (serving over 50,000 people). Seventy-nine percent of the non-responsive systems were served by ground water. The State with the greatest number of large systems that were non-responsive for 2,4-dinitrotoluene was Louisiana (13 of the 24 non-responsive systems). The non-response rate is smaller when assessed on a potential exposure (population-served) basis: Of the total population served by all eligible UCMR 1 large systems, approximately 0.4% is served by the 24 non-responsive systems. If any of these non-responsive systems actually had detectable levels of 2,4-DNT, the UCMR 1 national results would underestimate actual occurrence at large systems. The maximum value (upper bound) of the potential underestimation of population served by large systems with 2,4-DNT is 0.4%.

Because the HRL for 2,4-DNT (0.05 µg/L) is lower than the MRL used for monitoring (2 µg/L), EPA used the MRL to formally evaluate occurrence and exposure. The MRL is within the 10^{-4} to the 10^{-6} cancer risk range for 2,4-DNT.[20]

[20] When EPA specified the analytical methods and the MRL for the monitoring of 2,4- and 2,6-DNT in UCMR 1, the Agency chose an MRL that was within the capabilities of the most commonly used methods for drinking water laboratories at that time. The 2,4- and 2,6-DNT MRL of 2 µg/L is within the 10^{-4} to 10^{-6} cancer risk range, which is considered an acceptable risk range by the Agency for carcinogens.

Exhibit 6.4: Summary of Stage 1 Occurrence Measures of 2,4-Dinitrotoluene

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,342	0	0.00%	590	0	0.00%	0	0.00%
SW	909	0	0.00%	207	0	0.00%	0	0.00%
All	3,251	0	0.00%	797	0	0.00%	0	0.00%
Large Systems (Census)								
GW	15,944	0	0.00%	1,380	0	0.00%	0	0.00%
SW	14,569	1	0.01%	1,696	1	0.06%	0	0.00%
All	30,513	1	<0.01%	3,076	1	0.03%	0	0.00%
All Systems								
Total Water Systems[1]	33,764	1	<0.01%	3,873	1	0.03%	0	0.00%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

6.5 2,6-Dinitrotoluene

2,6-Dinitrotoluene (2,6-DNT) was not detected at or above the MRL of 2.0 µg/L in any of the 33,765 samples for which it was tested (see Exhibit 6.5). A total of 3,873 PWSs were tested for 2,6-dinitrotoluene, of which 1,970 relied on ground water sources and 1,903 on surface water sources.

2,6-DNT data were collected and reported by 797 (99.6% of) small PWSs with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that 2,6-DNT is not likely to be present in the nation's small systems).

2,6-DNT data were collected by 3,076 (99.2% of) large PWSs with 98.8% of large system data determined to be acceptable based on data quality QA/QC criteria. The large system census is therefore slightly incomplete, with a system non-response rate of 0.8%. Eighty-eight percent of the 24 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people); the remaining systems were in from the "very large" size category (serving over 50,000 people). Seventy-nine percent of the non-responsive systems were served by ground water. The State with the greatest number of large systems that were non-responsive for 2,6-dinitrotoluene was Louisiana (13 of the 24 non-responsive systems). The large system non-response rate is smaller when assessed on a potential exposure (population-served) basis: of the total population served by all eligible UCMR 1 large systems, approximately 0.4% is served by the 24 non-responsive systems. If any of these non-responsive systems actually had detectable levels of 2,6-DNT, the UCMR 1 national occurrence results would underestimate actual occurrence at large systems. The maximum value (upper bound) of the potential underestimation of the population served by large systems with 2,6-DNT is 0.4%.

Because the HRL for 2,6-DNT (0.05 µg/L) is lower than the MRL used for monitoring (2 µg/L), EPA used the MRL to formally evaluate occurrence and exposure. The MRL is within the 10^{-4} to the 10^{-6} cancer risk range for 2,6-DNT.[21]

[21] When EPA specified the analytical methods and the MRL for the monitoring of 2,4- and 2,6-DNT in UCMR 1, the Agency chose an MRL that was within the capabilities of the most commonly used methods for drinking water laboratories at that time. The 2,4- and 2,6-DNT MRL of 2 µg/L is within the 10^{-4} to 10^{-6} cancer risk range, which is considered an acceptable risk range by the Agency for carcinogens.

Exhibit 6.5: Summary of Stage 1 Occurrence Measures of 2,6-Dinitrotoluene

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,342	0	0.00%	590	0	0.00%	0	0.00%
SW	909	0	0.00%	207	0	0.00%	0	0.00%
All	3,251	0	0.00%	797	0	0.00%	0	0.00%
Large Systems (Census)								
GW	15,946	0	0.00%	1,380	0	0.00%	0	0.00%
SW	14,568	0	0.00%	1,696	0	0.00%	0	0.00%
All	30,514	0	0.00%	3,076	0	0.00%	0	0.00%
All Systems								
Total Water Systems[1]	33,765	0	0.00%	3,873	0	0.00%	0	0.00%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

6.6 EPTC

EPTC was not detected at or above the MRL of 1.0 µg/L in any of the 33,798 samples for which it was tested (Exhibit 6.6). A total of 3,873 PWSs were tested for EPTC, of which 1,970 relied on ground water sources and 1,903 on surface water sources.

EPTC data were collected and reported by 797 (99.6% of) small PWSs with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that EPTC is not likely to be present in the nation's small systems).

EPTC data were collected by 3,076 (99.2% of) large PWSs with 98.4% of large system data determined to be acceptable based on data quality QA/QC criteria. The large system census is therefore slightly incomplete, with a system non-response rate of 0.8%. Eighty-eight percent of the 24 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people); the remaining systems were from the "very large" size category (serving over 50,000 people). Seventy-nine percent of the non-responsive systems were served by ground water. The State with the greatest number of large systems that were non-responsive for EPTC was Louisiana (13 of the 24 non-responsive systems). The large system non-response rate is smaller when assessed on a potential exposure (population-served) basis. Of the total population served by all eligible UCMR 1 large systems, approximately 0.4% is served by the 24 non-responsive systems. If any of these non-responsive systems actually had detectable levels of the EPTC, the UCMR 1 national occurrence results would underestimate actual occurrence at large systems. The maximum value (upper bound) of the potential underestimation of population served by large systems with EPTC is 0.4%.

Exhibit 6.6: Summary of Stage 1 Occurrence Measures of EPTC

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,342	0	0.00%	590	0	0.00%	0	0.00%
SW	909	0	0.00%	207	0	0.00%	0	0.00%
All	3,251	0	0.00%	797	0	0.00%	0	0.00%
Large Systems (Census)								
GW	15,947	0	0.00%	1,380	0	0.00%	0	0.00%
SW	14,600	0	0.00%	1,696	0	0.00%	0	0.00%
All	30,547	0	0.00%	3,076	0	0.00%	0	0.00%
All Systems								
Total Water Systems[1]	33,798	0	0.00%	3,873	0	0.00%	0	0.00%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

6.7 Fonofos

Fonofos was not detected at or above the MRL of 0.5 µg/L in any of the 2,306 samples for which it was tested (see Exhibit 6.7). A total of 295 PWSs collected occurrence data for fonofos, of which 164 relied on ground water sources and 131 on surface water sources. Testing for fonofos was part of the List 2 Screening Survey, which is why far fewer systems were sampled for fonofos than for the other contaminants discussed in this chapter, which were all List 1 contaminants. Of the 180 small PWSs selected for List 2 monitoring, 178 (98.9%) collected and reported occurrence data for fonofos with all the small system data determined to be acceptable based on data quality QA/QC criteria. Fonofos data were submitted by a total of 117 (97.5%) of the 120 large PWSs selected for List 2 monitoring with 2.8% of the large system records removed because they did not meet QA/QC criteria. This high response rate and high data quality indicates that these List 2 results for fonofos provide reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that fonofos is not likely to be present in the nation's small or large systems).

Exhibit 6.7: Summary of Stage 1 Occurrence Measures of Fonofos

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)[1]								
GW	380	0	0.00%	114	0	0.00%	0	0.00%
SW	263	0	0.00%	64	0	0.00%	0	0.00%
All	643	0	0.00%	178	0	0.00%	0	0.00%
Large Systems (Statistical Sample)[2]								
GW	883	0	0.00%	50	0	0.00%	0	0.00%
SW	780	0	0.00%	67	0	0.00%	0	0.00%
All	1,663	0	0.00%	117	0	0.00%	0	0.00%
All Systems								
Total Water Systems	2,306	0	0.00%	295	0	0.00%	0	0.00%

[1] The 178 small water systems (population served ≤ 10,000) conducting UCMR 1 List 2 monitoring represent a statistically representative sub-sample of the 800 small systems selected to participate in List 1 monitoring.

[2] The 117 large water systems (population served > 10,000) conducting UCMR 1 List 2 monitoring represent a statistically representative sub-sample of the 3,100 large systems that participated in List 1 monitoring.

6.8 MTBE

MTBE was detected at or above the MRL of 5 µg/L in 26 (0.08%) of 33,768 samples collected. MTBE occurred in both ground water and surface water systems, but was more prevalent in ground water (see Exhibit 6.8.a). Occurrence rates in small systems (0.38%) and large systems (0.52%) were not markedly different, with an overall (small and large system) rate of 0.49%. UCMR 1 monitoring identified MTBE occurrence at 19 PWSs located in 14 States. Seven of those 19 PWSs had multiple detections of this contaminant. Extrapolated to the national level, these findings suggest that approximately 900,000 persons were served by drinking water systems with detectable levels of MTBE (see Exhibit 6.8.c). (See Section 4 for an explanation of small system national extrapolations.) The average value among MTBE detections was 15.2 µg/L and the median value was 9.2 µg/L. There currently is no HRL available for MTBE, so occurrence was assessed only relative to the MRL.

MTBE data were collected by 796 (99.5% of) small PWSs with all the small system data determined to be acceptable based on data quality QA/QC criteria. This high response rate and high data quality satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in the extrapolated estimate of national occurrence at small systems.

MTBE data were collected by 3,075 (99.2% of) large PWSs with 98.8% of large system data determined to be acceptable based on data quality QA/QC criteria. The large system census is therefore slightly incomplete, with a system non-response rate of 0.8%. Eighty-four percent of the 25 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people), and the remaining 16% were from the "very large" size category (serving more than 50,000 people). Seventy-two percent of the non-responsive systems were served by ground water (the source water type with higher MTBE occurrence). The States with the greatest number of large systems that were non-responsive for MTBE were Louisiana and New Jersey (each State had 5 of the 25 non-responsive systems). None of the 57 large and very large PWSs that did report MTBE results in Louisiana had any detections of MTBE. Of the 107 large and very large PWSs in New Jersey that did report MTBE results, about 1.9% found MTBE detections. (Nationally, 0.52% of large and very large systems found MTBE detections.) The large system non-response rate is smaller when assessed on a potential exposure (population-served) basis. Of the total population served by all eligible UCMR 1 large systems, approximately 0.5% is served by the 25 non-responsive systems. If any of these non-responsive systems actually had detectable levels of MTBE, UCMR 1 results would underestimate actual MTBE occurrence at large systems. The maximum value (upper bound) of the potential underestimation of population served by large systems with MTBE is 0.5%.

Exhibit 6.8.a: Summary of Stage 1 Occurrence Measures of MTBE

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,341	3	0.13%	589	3	0.51%	0	0.00%
SW	927	0	0.00%	207	0	0.00%	0	0.00%
All	3,268	3	0.09%	796	3	0.38%	0	0.00%
Large Systems (Census)								
GW	15,924	17	0.11%	1,381	12	0.87%	5	0.36%
SW	14,576	6	0.04%	1,694	4	0.24%	2	0.12%
All	30,500	23	0.08%	3,075	16	0.52%	7	0.23%
All Systems								
Total Water Systems[1]	33,768	26	0.08%	3,871	19	0.49%	7	0.18%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

Exhibit 6.8.b: National Extrapolation of Stage 1 Occurrence Measures of MTBE in Small PWSs

Water Type	System Size by Population Served	Total Number		Detections (≥ MRL)					
				UCMR 1 Data		Percentage		National Extrapolation	
		Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop
Small Systems									
GW	≤ 500	111	27,599	0	0	0.00%	0.00%	0	0
	501 - 3,300	244	439,011	3	4,150	1.23%	0.95%	149	147,000
	3,301 - 10,000	234	1,470,717	0	0	0.00%	0.00%	0	0
	Total	**589**	**1,937,327**	**3**	**4,150**	**0.51%**	**0.21%**	**149**	**147,000**
SW	≤ 500	52	16,662	0	0	0.00%	0.00%	0	0
	501 - 3,300	45	91,723	0	0	0.00%	0.00%	0	0
	3,301 - 10,000	110	712,370	0	0	0.00%	0.00%	0	0
	Total	**207**	**820,755**	**0**	**0**	**0.00%**	**0.00%**	**0**	**0**
All Small Systems		**796**	**2,758,082**	**3**	**4,150**	**0.38%**	**0.15%**	**149**	**147,000**

No HRL has been established for MTBE.

Exhibit 6.8.c: Stage 1 National Occurrence Measures of MTBE Based on UCMR 1 Large System and Extrapolated Small System Data

Water Type	System Size by Population Served	Detections (≥ MRL)			
		Number		Percentage	
		Sys	Pop	Sys	Pop
Small Systems					
GW	≤ 500	0	0	0.00%	0.00%
	501 - 3,300	149	147,000	1.23%	0.95%
	3,301 - 10,000	0	0	0.00%	0.00%
	Total	**149**	**147,000**	**0.51%**	**0.21%**
SW	≤ 500	0	0	0.00%	0.00%
	501 - 3,300	0	0	0.00%	0.00%
	3,301 - 10,000	0	0	0.00%	0.00%
	Total	**0**	**0**	**0.00%**	**0.00%**
All Small Systems		**149**	**147,000**	**0.38%**	**0.15%**
Large Systems					
GW	10,001 - 50,000	9	179,894	0.76%	0.67%
	> 50,000	3	241,292	1.59%	0.92%
	Total	12	421,186	0.87%	0.79%
SW	10,001 - 50,000	2	55,388	0.17%	0.17%
	> 50,000	2	272,909	0.39%	0.20%
	Total	4	328,297	0.24%	0.19%
All Large Systems		**16**	**749,483**	**0.52%**	**0.34%**
All Systems (National Extrapolation plus Census)					
Total Water Systems		**165**	**896,483**	**0.49%**	**0.33%**

No HRL has been established for MTBE.

Sample-point-level occurrence analyses for MTBE are presented in Exhibit 6.8.d. No small systems had more than a single detection at a single SP. A total of 4 large PWSs, serving approximately 97,000 persons, had multiple detections of MTBE at a single sampling point. Three large PWSs, serving 99,000 persons, had MTBE detections at multiple SPs. Using another measure of occurrence, the sampling point (SP) proportional population, it is estimated that approximately 0.1% of the population served by PWSs nationally, or 199,000 persons, is served by entry points/sample points with detections of MTBE. (This proportional population served by sample points with detections, a less conservative measure of occurrence, is calculated by multiplying a PWS's total population served by the percentage of that PWS's sampling points with a contaminant detection. Refer to Section 4.3 for more details regarding the proportional population analysis.)

Exhibit 6.8.d: Summary of Sample-Point-Level Occurrence Measures of MTBE Based on UCMR 1 Small System Extrapolated Data and Large System Census Data

Water Type	Total			At Least 2 Detections at 1 SP				At Least 1 Detect at 2 SPs				SP Proportional Population With At Least One Detection			
	Sys	SPs	Pop	Systems		Population		Systems		Population		SPs [1]		Population [2]	
				#	%	#	%	#	%	#	%	#	%	#	%
Small Systems															
GW	589	1,207	1,937,327	0	0.00%	0	0.00%	0	0.00%	0	0.00%	147	0.25%	87,000	0.13%
SW	207	243	820,755	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
All	796	1,450	2,758,082	0	0.00%	0	0.00%	0	0.00%	0	0.00%	147	0.21%	87,000	0.09%
Large Systems															
GW	1,381	8,161	53,273,126	3	0.22%	74,000	0.14%	2	0.14%	30,000	0.06%	14	0.17%	77,000	0.14%
SW	1,694	5,281	169,958,828	1	0.06%	22,000	0.01%	1	0.06%	69,000	0.04%	5	0.09 %	35,000	0.02%
All [3]	3,075	13,442	223,231,954	4	0.13%	97,000	0.04%	3	0.10%	99,000	0.04%	19	0.14%	112,000	0.05%
All Small plus Large Systems															
All Systems	3,871	14,892	225,990,036	4	0.10%	97,000	0.04%	3	0.08%	99,000	0.04%	166	0.15%	199,000	0.05%

All Population values are rounded to the nearest thousand.

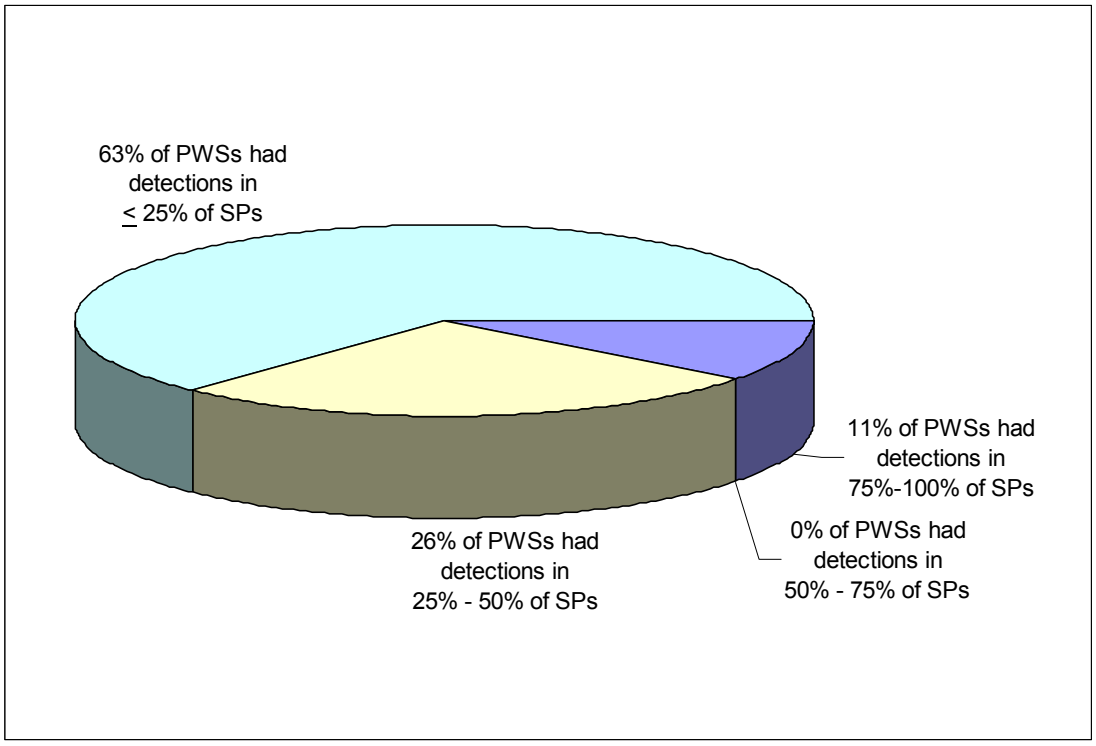
[1] The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. (The average number of sampling points per system was obtained from the Community Water System Survey 2000, Volume II Detailed Tables and Survey Methodology.) The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

[2] Sample point proportional population was calculated by multiplying each system's total population served by the percentage of that PWS's sampling points found with a contaminant detection.

[3] Due to rounding, the GW and SW population values do not add up to the total population value.

Exhibit 6.8.e illustrates the proportion of systems with MTBE detections in various percentages of their SPs. Note that there were only 19 systems with detections of MTBE. Sixty-three (63) percent of systems with detections of MTBE had detections in 25% of their SPs or less. Only 11% of systems with detections had detections in more than 50% of their SPs. When MTBE was detected, it was more often than not detected in only one SP. (Note that for all UCMR 1 systems with MTBE detections, 11% had only 1 SP.)

Exhibit 6.8.e: Percentage of SPs with Detections of MTBE (Among Systems with At Least One Detection)



6.9 Terbacil

Terbacil was not detected at or above the MRL of 2.0 µg/L in any of the 33,800 samples for which it was tested (see Exhibit 6.9). A total of 3,873 PWSs were tested for terbacil, of which 1,970 relied on ground water sources and 1,903 on surface water sources.

Terbacil data were collected by 797 (99.6% of) small PWSs and all small system data for terbacil were determined to be acceptable based on data quality QA/QC criteria. This high response rate satisfies data quality objectives for representativeness and completeness in the small system statistical survey, meaning that we can have reasonable confidence in an extrapolated estimate of national occurrence (in this case, the data indicate that terbacil is not likely to be present in the nation's small systems).

Terbacil data were collected by 3,076 (99.2% of) large PWSs with 98.4% of large system data determined to be acceptable based on data quality QA/QC criteria. The large system census is therefore slightly incomplete, with a system non-response rate of 0.8%. Eighty-eight percent of the 24 non-responsive large systems were from the "large" size category (serving between 10,001 and 50,000 people); the remaining systems were from the "very large" size category. Seventy-nine percent of the non-responsive systems were served by ground water. The State with the greatest number of large systems that were non-responsive for terbacil was Louisiana (13 of the 24 non-responsive systems). The non-response rate is smaller when assessed on a potential exposure (population-served) basis. Of the total population served by all eligible UCMR 1 large systems, approximately 0.4% is served by the 24 non-responsive systems. If any of these non-responsive systems actually had terbacil occurrence, the UCMR results would underestimate actual occurrence. The maximum value (upper bound) of the potential underestimation of the population served by systems with detections of terbacil is 0.4%.

Exhibit 6.9: Summary of Stage 1 Occurrence Measures of Terbacil

Water Type	Sample-level			System-level				
	Number of Samples	Detections		Number of Systems	Systems with 1 Detection		Systems with 2 or more Detections	
		#	%		#	%	#	%
Small Systems (Statistical Sample)								
GW	2,342	0	0.00%	590	0	0.00%	0	0.00%
SW	909	0	0.00%	207	0	0.00%	0	0.00%
All	3,251	0	0.00%	797	0	0.00%	0	0.00%
Large Systems (Census)								
GW	15,934	0	0.00%	1,380	0	0.00%	0	0.00%
SW	14,615	0	0.00%	1,696	0	0.00%	0	0.00%
All	30,549	0	0.00%	3,076	0	0.00%	0	0.00%
All Systems								
Total Water Systems[1]	33,800	0	0.00%	3,873	0	0.00%	0	0.00%

[1] Note that small water systems (population served ≤ 10,000) conducting UCMR 1 monitoring represent a statistically representative sub-sample of all small systems, while the UCMR 1 large water systems (population served > 10,000) represent a census of all large systems. Comparisons and totals of raw data collected by small and large systems may not accurately represent national occurrence.

7. Stage 2 Occurrence Estimates -- An Example

At this time, EPA has concluded that none of the UCMR 1 contaminants assessed for regulatory determination warrant a Stage 2 analysis of occurrence. This conclusion is based on either Stage 1 analytical findings (Section 6) that indicate no significant occurrence at or near the HRLs and/or the contaminant may potentially have acute (rather than chronic) effects such that Stage 2 would not have been appropriate. Therefore, the additional effort to conduct the Stage 2 analyses is not warranted. However, to illustrate the second stage of the two-stage occurrence analytical approach, a Stage 2 analysis is conducted on DCPA degradates. Summary findings are presented below and detailed Stage 2 occurrence findings tables are included in Appendix C.

7.1 DCPA Mono- and Di-Acid Degradates

The Stage 2 occurrence findings for DCPA degradates are presented in Exhibits 7.1.a and 7.1.b. These are best estimates of the number and percent of PWSs with estimated DCPA degradate mean concentrations greater than or equal to the MRL and greater than ½ the HRL and HRL. The Stage 2 findings are based on estimated PWS annual mean concentrations of a contaminant and therefore reflect long-term occurrence. The statistically modeled best estimate values, including 90% and 95% confidence interval ranges around the best estimate value, are presented in Appendix C. (For more details regarding the Stage 2 analytical approach, refer to Appendix B of this report and USEPA, 2003a.)

Sixty-eight small PWSs nationally serving 21,500 persons are estimated to have a mean concentration of DCPA mono- and di-acid degradates exceeding the HRL of 70 µg/L (Exhibit 7.1.a). Approximately 75 small PWSs nationally serving 23,500 persons are expected to have an estimated mean concentration exceeding the ½ HRL of 35 µg/L. A total of 645 small PWSs nationally serving 571,300 persons are estimated to have a mean concentration exceeding 1 µg/L. A significantly higher proportion of small ground water PWSs are expected to have mean concentrations with exceedances compared to small surface PWSs water systems.

Exhibit 7.1.a: DCPA Degradates Stage 2 Occurrence Results for Small Systems

Source Water Type	Threshold (μg/L)	Small Systems Estimated to Exceed Threshold		Population Served by Small Systems Estimated to Exceed Threshold	
		Number [1,2]	Percent	Number [1,2]	Percent
Ground Water	70	86	0.15%	26,200	0.07%
	35	94	0.17%	28,700	0.08%
	1	789	1.41%	687,400	1.90%
Surface Water	70	0	0.00%	0	0.00%
	35	0	0.00%	0	0.00%
	1	4	0.10%	4,200	0.05%
Total (Ground Water + Surface Water)	70	68	0.11%	21,500	0.05%
	35	75	0.12%	23,500	0.05%
	1	645	1.07%	571,300	1.26%

[1] The number of systems and population served by systems presented in this table reflect national extrapolations.

[2] These probabilistic estimates are modeled separately for each level of aggregation (e.g., ground water, surface water, and total ground water plus surface water). Therefore, model estimates for the individual source water stratum will not sum to the Total Ground Water + Surface Water estimate because the separate stratified and total estimates are based on a different number of samples (different "n" for each estimate). The Total Ground & Surface Water estimate is based on the higher number of samples so likely represents the more robust estimate.

An even smaller number of large systems are estimated to have mean concentrations of the DCPA mono- and di-acid degradates exceeding 35 μg/L or 70 μg/L (Exhibit 7.1.b). In contrast, based on simple detections (concentrations above 1 μg/L), model estimated occurrence in large PWSs is greater than that for small PWSs. Sixty-two large PWSs nationally serving 4.6 million persons are estimated to have a mean concentration exceeding 1 μg/L. Similar to the small PWSs, more large ground water systems are expected to have mean concentrations with exceedances compared to large surface water systems.

Exhibit 7.1.b: DCPA Degradates Stage 2 Occurrence Results for Large Systems

Source Water Type	Threshold (μg/L)	Large Systems Estimated to Exceed Threshold		Population Served by Large Systems Estimated to Exceed Threshold	
		Number [1]	Percent [2]	Number [1]	Percent [2]
Ground Water	70	0	<0.01%	0	<0.01%
	35	0	<0.01%	0	<0.01%
	1	41	2.95%	1,589,600	2.97%
Surface Water	70	0	0.00%	0	0.00%
	35	0	<0.01%	0	<0.01%
	1	21	1.27%	2,117,100	1.26%
Total (Ground Water + Surface Water)	70	0	<0.01%	0	<0.01%
	35	0	<0.01%	0	<0.01%
	1	62	2.03%	4,589,600	2.07%

[1] These probabilistic estimates are modeled separately for each level of aggregation (e.g., ground water, surface water, and total ground water plus surface water). Therefore, model estimates for the individual source water stratum will not sum to the Total Ground Water + Surface Water estimate because the separate stratified and total estimates are based on a different number of samples (different "n" for each estimate). The "Total (Ground Water + Surface Water)" estimate is based on the higher number of samples so likely represents the more robust estimate.

[2] Percentage values less than 0.01% are effectively equal to zero (0) when carried through in the Stage 2 computations.

Exhibits 7.1.c and 7.1.d present a comparison of the Stage 1 findings to the Stage 2 best estimate findings for the small systems and large systems, respectively. Note that this table compares the two different types of analytical findings of the Stage 1 (non-parametric "peak" concentration values) and the Stage 2 (parametric "long-term" mean concentration values) analyses. This comparison is included as a general, qualitative evaluation of the Stage 2 model as well as a means to develop a sense of how straightforward Stage 1 findings relate to the statistically modeled Stage 2 findings. For the small systems, the Stage 1 findings (percent of systems with at least one analytical result greater than a specified threshold) are always higher than the Stage 2 findings (percent of systems with an estimated mean concentration greater than the threshold). Similarly, the large system Stage 1 findings are consistently higher than the large system Stage 2 findings. The one apparent exception is the percentage of systems and population served by systems with mean concentrations greater than 70 μg/L. The Stage 2 model estimates an extremely small proportion of large systems that apparently have a mean concentration greater than this threshold while the Stage 1 analysis found that no large systems had any results greater than 70 μg/L. The Stage 2 percentage findings, however, are effectively zero, reflecting less that 1 system and less than 5,000 population served.

Exhibit 7.1.c: Comparison of DCPA Degradates Stage 1 and Stage 2 Occurrence Results for Small Systems

Threshold	Number > Threshold [1]		Percent > Threshold	
	Stage 1	Stage 2	Stage 1	Stage 2
Systems				
70 µg/L (HRL)	373	68	0.13%	0.11%
35 µg/L (½ HRL)	373	75	0.13%	0.12%
1 µg/L (MRL)	689	645	2.13%	1.07%
Population Served				
70 µg/L (HRL)	112,900	21,500	0.018%	0.047%
35 µg/L (½ HRL)	112,900	23,500	0.018%	0.052%
1 µg/L (MRL)	1,117,300	571,300	3.19%	1.28%

[1] These numbers are national estimates (i.e., they have been extrapolated). Note that the Stage 1 extrapolations were generated by extrapolating each individual strata and then adding up those extrapolations to yield the total (presented here). The Stage 2 extrapolations, however, were directly calculated for all strata, including the "total" level presented here.

Exhibit 7.1.d: Comparison of DCPA Degradates Stage 1 and Stage 2 Occurrence Results for Large Systems

Threshold	Number > Threshold		Percent > Threshold	
	Stage 1	Stage 2	Stage 1	Stage 2 [1]
Systems				
70 µg/L (HRL)	0	0	0.00%	<0.01%
35 µg/L (½ HRL)	1	0	0.033%	<0.01%
1 µg/L (MRL)	158	62	5.14%	2.03%
Population Served				
70 µg/L (HRL)	0	0	0.00%	<0.01%
35 µg/L (½ HRL)	738,337	0	0.33%	<0.01%
1 µg/L (MRL)	11,220,836	4,589,600	5.05%	2.07%

[1] Percentage values less than 0.01% are effectively equal to zero (0) when carried through in the Stage 2 computations.

8. Spatial and Graphical Assessments of Contaminants

Up to three of the contaminants considered during CCL 2 regulatory determinations monitored under UCMR 1 were detected in multiple PWSs. Spatial and graphical assessments are provided in this section for these three contaminants (DCPA mono- and di-acid degradates, reported in aggregate, and MTBE). DDE and 2,4-dinitrotoluene were each detected only once; thus no spatial assessments are presented for those two. Breakdowns of sampling efforts by State for each of the ten contaminants considered during CCL 2 regulatory determinations can be found in Appendix G.

8.1 DCPA Mono- and Di-Acid Degradates

Public water systems with DCPA degradate detections (at concentrations ≥ 1 µg/L) were distributed across 24 States and the Territory of Guam (Exhibit 8.1.a). Systems with detections were found in four general State/region groupings: California and the western Rocky Mountain States, the Southeast, the Northeast, and the upper Midwest. These States cover a broad enough area that no geological or hydrological trend unites them all; however, the United States Geological Survey (USGS, 2004) identified similar States in its map of estimated annual agricultural uses of DCPA.[22] (Generally, areas of high use were located along the entire eastern seaboard, in the Great Lakes States, and in a large, ten-State area of the west, stretching from Washington and Idaho to California, Colorado, and Texas.) While many States had detections of the DCPA degradates, only one State, Michigan, had a detected concentration above the HRL of 70 µg/L; the concentration of this detection was 190 µg/L. The following maps, based on UCMR 1 data, give an indication of the geographic distribution of DCPA degradate occurrence in drinking water. Exhibit 8.1.a shows the distribution of States with at least one detection. Exhibit 8.1.b shows the relative frequency of detection in those States.

[22] DCPA has historically been used as a selective pre-emergence weed control on ornamental turf and plants, strawberries, seeded and transplanted vegetables, cotton, and field beans (USEPA, 1998).

Exhibit 8.1.a: Geographic Distribution of the DCPA Degradates – States with At Least One Detection Equal to or Above the MRL (≥ 1 µg/L)

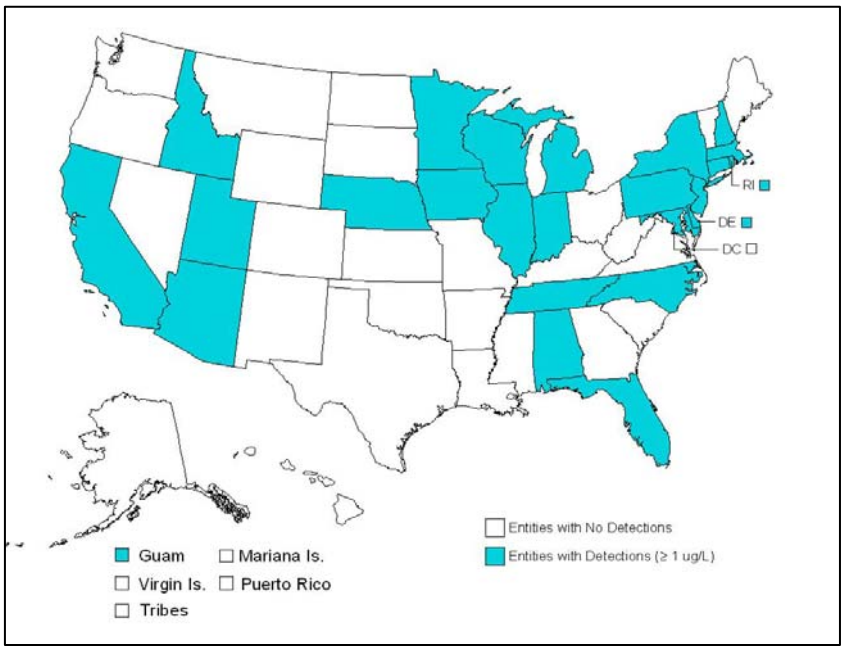
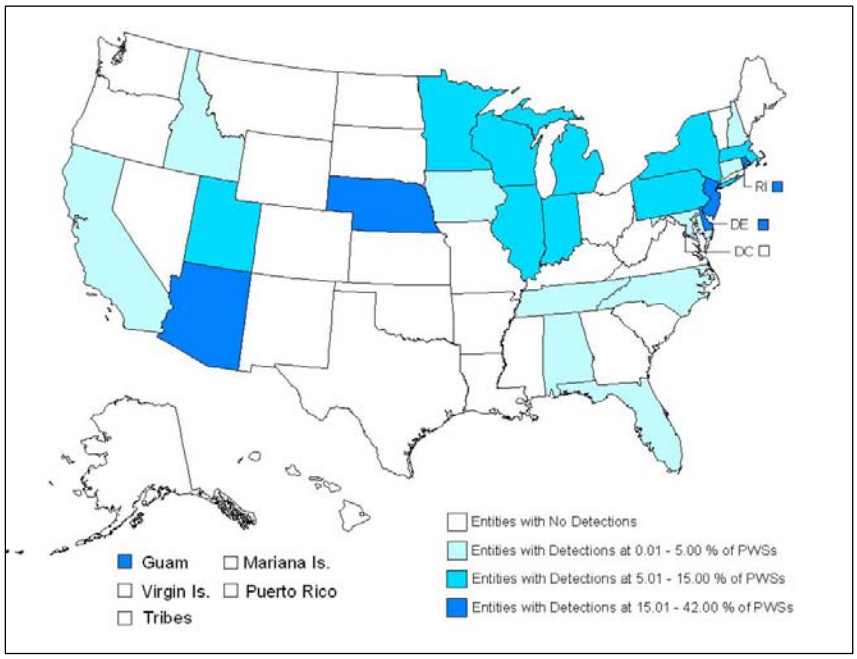


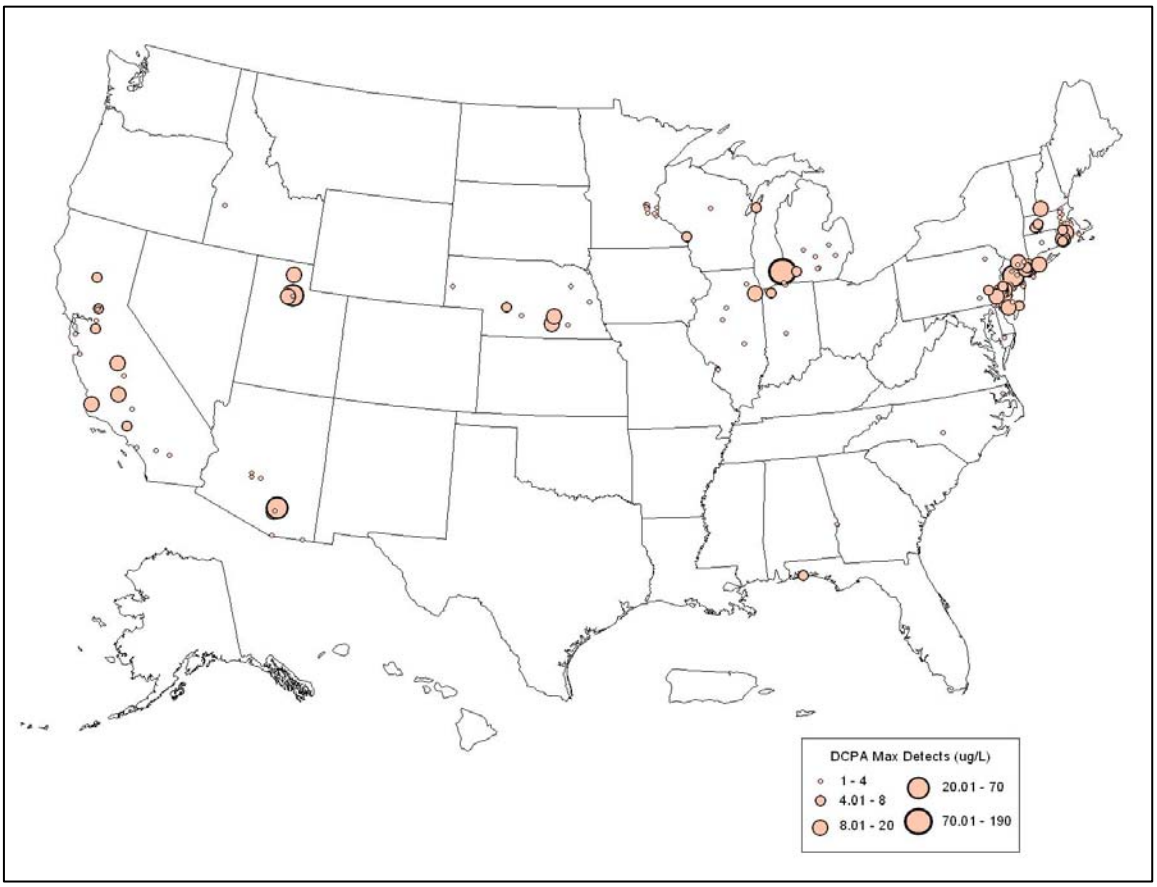
Exhibit 8.1.b: Geographic Distribution of the DCPA Degradates – State Percentage of PWSs with At Least One Detection Equal to or Above the MRL (≥ 1 µg/L)



Note: This map depicts UCMR 1 results from both small systems and large systems. The statistical selection of UCMR 1 small systems was designed to be representative at the national level, but not at the State level. Therefore, this map should only be considered an approximation of State-level patterns of contaminant occurrence.

Exhibit 8.1.c illustrates the geographic distribution of PWSs that detected DCPA degradates at various concentrations. Specifically, this map shows the maximum concentration of the DCPA degradates at each system where DCPA degradates were found in UCMR 1 sampling. This map shows that the 177 systems with detections of the DCPA degradates are generally restricted to a few areas: California and Arizona, the Salt Lake City region, Nebraska, the Minneapolis-St. Paul metropolitan area, southern Lake Michigan, and the broad area from Philadelphia to New York City and southern New England. The densest grouping of high-concentration detections is in the Philadelphia to New York City vicinity. It is important to note, however, that all the DCPA degradate detections – with the exception of a single detection in Michigan – have concentrations below the HRL of 70 µg/L.

Exhibit 8.1.c: System-Level Geographic Distribution of the DCPA Degradates – Maximum Concentration of Detections per System



8.2 MTBE

MTBE was detected in 14 States and no territories (see Exhibit 8.2.a). No strong geographic trend is apparent, though many States in the Northeast detected MTBE. The Northeast States, plus California and Missouri, broadly constitute the areas of the United States where MTBE use as a gasoline additive has been greatest due to requirements of the Federal Reformulated Gasoline (RFG) Program. For more information on uses of MTBE, refer to USEPA (2008b). The four States with the highest percentage of systems with MTBE detections were New Hampshire, New Mexico, South Dakota and West Virginia. New Hampshire has a well-documented history of MTBE contamination as a result of oxygenated fuels and New Mexico (specifically, the city of Albuquerque) used MTBE as a fuel additive due to its participation in the Winter Oxygenated Fuel Program (USEPA, 2001c). However, neither South Dakota nor West Virginia participated in the RFG or Winter Oxyfuel Programs (USEPA, 2001c and 2005). Until 2001, South Dakota allowed MTBE to be mixed with gasoline up to 2% by volume; now there is a ban limiting MTBE concentrations in gasoline to trace amounts (0.5% by volume) (USEPA, 2004). West Virginia has not placed any statewide limitations on the use of MTBE in gasoline. Exhibit 8.2.a shows the distribution of States with at least one detection. Exhibit 8.2.b shows the relative frequency of detection in those States.

Exhibit 8.2.a: Geographic Distribution of MTBE – States with At Least One Detection Equal to or Above the MRL (≥ 5 µg/L)

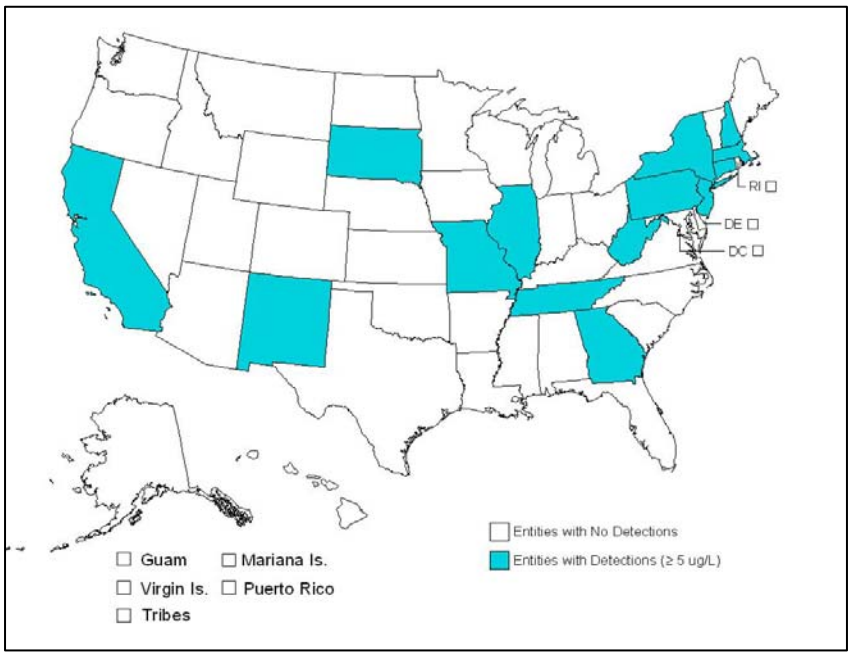
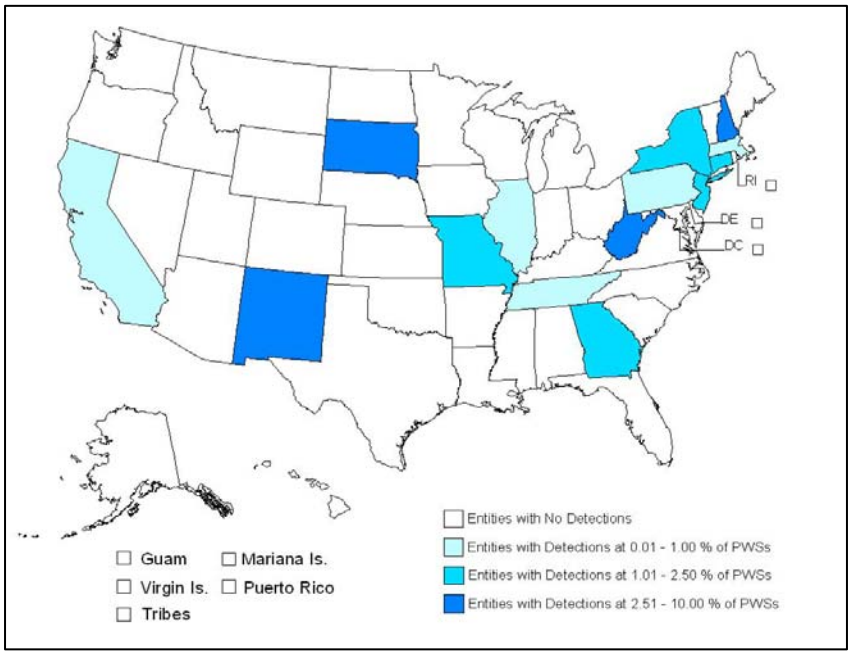


Exhibit 8.2.b: Geographic Distribution of MTBE – State Percentage of PWSs with At Least One Detection Equal to or Above the MRL (≥ 5 µg/L)



Note: This map depicts UCMR 1 results from both small systems and large systems. The statistical selection of UCMR 1 small systems was designed to be representative at the national level, but not at the State level. Therefore, this map should only be considered an approximation of State-level patterns of contaminant occurrence.

Exhibit 8.2.c shows the maximum concentration at each system where MTBE was detected. No particular geographic pattern is evident.

Exhibit 8.2.c: System-Level Geographic Distribution of MTBE – Maximum Concentration of Detections per System

9. Summary of Findings

The most current and complete version of the UCMR 1 data set, the March 2006 version, contains more than 400,000 individual sample analytical results for a total of 26 contaminants. Ten of those contaminants (those that were considered during CCL 2 regulatory determinations monitored under the UCMR 1) are described in detail in this report. Contaminant samples were collected between May 2000 and October 2005, with almost 95% collected between January 2001 and December 2003. Data were collected from all 50 States, plus Washington D.C., Tribal Nations, Puerto Rico, the American Virgin Islands, Guam, and the Commonwealth of the Northern Mariana Islands. List 1 Assessment Monitoring was completed by 797 (99.6%) of the 800 selected small systems and 3,090 (99.7%) of the complete census of 3,100 large systems. List 2 Screening Survey monitoring was completed by 178 (98.9%) of the 180 selected small systems and 117 (97.5%) of the 120 selected large systems.

Five of the ten CCL 2 contaminants monitored under UCMR 1 were not detected at all. These included fonofos (results from 295 large and small systems), 1,3-dichloropropene (results from 796 small systems), and 2,6-dinitrotoluene, EPTC, and terbacil (results from 3,873 large and small systems). DDE and 2,4-dinitrotoluene, monitored at 3,874 and 3,873 systems, respectively, were each detected exactly once. DDE was detected in one large ground water system in Alabama at a concentration of 3 µg/L. 2,4-Dinitrotoluene was detected in one large surface water system in Tennessee at a concentration of 333 µg/L. Up to three contaminants (the two DCPA degradates, reported in aggregate, and MTBE) had multiple detections in multiple States, and these are discussed in more detail below.

The DCPA degradates were detected in approximately 4.57% of all participating large and small systems (776 detections at 177 PWSs). This corresponds to an estimated 849 systems serving approximately 12.4 million people nationally. The maximum detected concentration of the DCPA degradates was 190 µg/L, the 99th percentile concentration among detections was 18 µg/L, the average concentration among detections was 3.48 µg/L and the median concentration among detections was 2.00 µg/L. The highest concentration detected among large systems was 39 µg/L. Only two PWSs (one small system and one large system) detected concentrations greater than 35 µg/L (½ HRL), and only one small PWS detected concentrations greater than 70 µg/L (the HRL).

MTBE was detected in both ground water and surface water, but was more prevalent in ground water. Approximately 0.49% of all large and small participating systems had at least one detection of MTBE (a total of 26 detections from 19 PWSs). This corresponds to an estimated 165 systems serving approximately 896,000 people nationally. The maximum detected concentration of MTBE was 49 µg/L, the 99th percentile concentration among detections was 49 µg/L, the average concentration among detections was 15.2 µg/L, and the median concentration among detections was 9.2 µg/L. There is currently no HRL for MTBE.

10. References

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APPENDICES

Appendix A. Stage 1 Occurrence Measures for All Other UCMR Contaminants

Table A1.a. Acetochlor - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,514			1,186			26,849,175		
	> 50,000	5,412			190			26,476,158		
	Total	15,926	0	0.00%	1,376	0	0.00%	53,325,333	0	0.00%
Surface Water	10,001 - 50,000	7,425			1,187			33,405,163		
	> 50,000	7,176			509			136,681,205		
	Total	14,601	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,527	0	0.00%	3,072	0	0.00%	223,411,701	0	0.00%
All Systems										
Total Water Systems[1]		33,778	0	0.00%	3,869	0	0.00%	226,172,271	0	0.00%

[1] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table A1.b. Acetochlor - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	236	47	9	4	14	20
Arizona	1,314	59	11	1	34	13
California	8,548	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,165	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	397	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	343	77	2	7	6	62
Louisiana	320	72	23	4	22	23
Massachusetts	1,137	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	125	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,327	160	21	8	50	81
Ohio	549	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	103	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	687	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,778	3,869	590	207	1,376	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A1.c. Acetochlor - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	72	2,605,619	75,303	13,120	726,919	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,869	226,172,271	1,939,815	820,755	53,325,333	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A2.a. Aeromonas - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level					Population-Served Level				
		Total # of Samples	Detections		Total # of Systems	Detections				Total Pop. Served by Systems	Detections			
						Systems with One or More		Systems with Two or More			Pop. Served by Systems with One or More		Pop. Served by Systems with Two or More	
			#	%		#	%	#	%		#	%	#	%
Small Systems (Statistical Sample)														
GW	25 - 500	595	28	4.71%	36	6	16.67%	4	11.11%	7,223	1,265	17.51%	729	10.09%
	501 - 3,300	852	35	4.11%	50	13	26.00%	5	10.00%	88,167	23,149	26.26%	9,020	10.23%
	3,301 - 10,000	586	23	3.92%	34	4	11.76%	3	8.82%	242,928	28,243	11.63%	23,098	9.51%
	Total	2,033	86	4.23%	120	23	19.17%	12	10.00%	338,318	52,657	15.56%	32,847	9.71%
SW	25 - 500	260	14	5.38%	15	3	20.00%	1	6.67%	5,776	1,139	19.72%	460	7.96%
	501 - 3,300	229			14					29,230				
	3,301 - 10,000	434	5	1.15%	25	3	12.00%	1	4.00%	153,671	24,796	16.14%	8,000	5.21%
	Total	923	19	2.06%	54	6	11.11%	2	3.70%	188,677	25,935	13.75%	8,460	4.48%
All Small Systems		2,956	105	3.55%	174	29	16.67%	14	8.05%	526,995	78,592	14.91%	41,307	7.84%
Large Systems (Statistical Sample)														
GW	10,001 - 50,000	466	2	0.43%	26	2	7.69%			663,464	49,300	7.43%		
	> 50,000	459	7	1.53%	26	6	23.08%	1	3.85%	5,586,543	1,155,698	20.69%	56,315	1.01%
	Total	925	9	0.97%	52	8	15.38%	1	1.92%	6,250,007	1,204,998	19.28%	56,315	0.90%
SW	10,001 - 50,000	603	8	1.33%	34	2	5.88%	2	5.88%	1,284,768	67,171	5.23%	67,171	5.23%
	> 50,000	564	8	1.42%	32	3	9.38%	1	3.13%	17,867,890	4,655,200	26.05%	979,000	5.48%
	Total	1,167	16	1.37%	66	5	7.58%	3	4.55%	19,152,658	4,722,371	24.66%	1,046,171	5.46%
All Large Systems		2,092	25	1.20%	118	13	11.02%	4	3.39%	25,402,665	5,927,369	23.33%	1,102,486	4.34%
All (Small & Large) Systems														
Total Water Systems		5,048	130	2.58%	292	42	14.38%	18	6.16%	25,929,660	6,005,961	23.16%	1,143,793	4.41%

Table A2.b. Aeromonas - Statistics for All Detections (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Total # of Detections	Statistics for All Recorded Values Equal to or Above the Detection Limit (in CFU/100 mL)			
			Minimum	Median	99th Percentile	Maximum
Small Systems (Statistical Sample)						
GW	25 - 500	28	0.2	3.1	380.0	380.0
	501 - 3,300	35	0.2	0.6	40.0	40.0
	3,301 - 10,000	23	0.2	1.2	69.0	69.0
	Total	86	0.2	1.3	140.0	380.0
SW	25 - 500	14	0.2	3.0	800.0	800.0
	501 - 3,300	0				
	3,301 - 10,000	5	0.2	1.8	28.0	28.0
	Total	19	0.2	2.7	800.0	800.0
All Small Systems		105	0.2	1.6	680	800
Large Systems (Statistical Sample)						
GW	10,001 - 50,000	2	0.2	1.1	2.0	2.0
	> 50,000	7	0.2	0.2	2.6	2.6
	Total	9	0.2	0.2	2.6	2.6
SW	10,001 - 50,000	8	0.6	3.8	880.0	880.0
	> 50,000	8	0.2	2.5	52.8	52.8
	Total	16	0.2	2.7	880.0	880.0
All Large Systems		25	0.2	1.6	880.0	880.0
All (Small & Large) Systems						
Total Water Systems		130	0.2	1.6	800.0	880.0

Table A2.c. Aeromonas - System Level Occurrence by State and Size Category (UCMR 1 March 2006 Data)

State [1,2]	Total # Samples	Total # PWSs			# PWSs with Detections			% PWSs with Detections		
		Total	Small	Large	Total	Small	Large	Total	Small	Large
Alaska	18	1	1	0						
Alabama	53	3	2	1						
Arkansas	124	7	4	3						
Arizona	70	4	3	1	1	1	0	25.00%	33.33%	0.00%
California	425	25	10	15	3	0	3	12.00%	0.00%	20.00%
Colorado	51	3	2	1	1	1	0	33.33%	50.00%	0.00%
Connecticut	18	1	1	0						
D.C.										
Delaware	18	1	1	0						
Florida	271	16	4	12	5	0	5	31.25%	0.00%	41.67%
Georgia	139	8	6	2	1	1	0	12.50%	16.67%	0.00%
Guam										
Hawaii	54	3	1	2						
Iowa	120	7	5	2						
Idaho	51	3	1	2						
Illinois	268	15	6	9	1	1	0	6.67%	16.67%	0.00%
Indiana	126	7	4	3						
Kansas	79	5	3	2						
Kentucky	53	3	2	1						
Louisiana	139	8	6	2	1	1	0	12.50%	16.67%	0.00%
Massachusetts	135	8	2	6	3	0	3	37.50%	0.00%	50.00%
Maryland	69	4	3	1	1	1	0	25.00%	33.33%	0.00%
Maine	54	3	1	2						
Michigan	158	9	7	2	2	2	0	22.22%	28.57%	0.00%
Minnesota	121	7	4	3	1	1	0	14.29%	25.00%	0.00%
Missouri	70	4	4	0	2	2	0	50.00%	50.00%	0.00%
N. Mariana Is.										
Mississippi	48	3	3	0	2	2	0	66.67%	66.67%	0.00%
Montana	29	2	2	0	1	1	0	50.00%	50.00%	0.00%
North Carolina	230	13	6	7	1	0	1	7.69%	0.00%	14.29%
North Dakota	18	1	1	0						
Nebraska	72	4	4	0	1	1	0	25.00%	25.00%	0.00%
New Hampshire	18	1	1	0						
New Jersey	90	5	2	3	1	1	0	20.00%	50.00%	0.00%
New Mexico	54	3	2	1						
Nevada										
New York	224	13	10	3	1	1	0	7.69%	10.00%	0.00%
Ohio	175	10	4	6						
Oklahoma	68	4	3	1						
Oregon	59	4	4	0	2	2	0	50.00%	50.00%	0.00%
Pennsylvania	90	5	3	2	1	0	1	20.00%	0.00%	50.00%
Puerto Rico	36	2	1	1	1	1	0	50.00%	100.00%	0.00%
Rhode Island	18	1	0	1						
South Carolina	90	5	4	1	2	2	0	40.00%	50.00%	0.00%
South Dakota	18	1	1	0						
Tennessee	70	4	3	1	1	1	0	25.00%	33.33%	0.00%
Texas	424	25	14	11	1	1	0	4.00%	7.14%	0.00%
Utah	36	2	2	0						
Virginia	89	5	3	2	1	1	0	20.00%	33.33%	0.00%
Virgin Islands										
Vermont	35	2	1	1						
Washington	158	9	6	3	2	2	0	22.22%	33.33%	0.00%
Wisconsin	108	7	5	2	2	2	0	28.57%	40.00%	0.00%
West Virginia	53	3	3	0						
Wyoming	36	2	2	0						
Tribe - 05										
Tribe - 06										
Tribe - 07										
Tribe - 08	18	1	1	0						
Tribe - 09										
Total	5,048	292	174	118	42	29	13	14.38%	16.67%	11.02%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A2.d. Aeromonas - System Level Occurrence by State and Source Water Type (UCMR 1 March 2006 Data)

State [1,2]	Total # PWSs			# PWSs with Detections			% PWSs with Detections		
	Total	GW	SW	Total	GW	SW	Total	GW	SW
Alaska	1	1	0						
Alabama	3	2	1						
Arkansas	7	4	3						
Arizona	4	3	1	1	1	0	25.00%	33.33%	0.00%
California	25	11	14	3	2	1	12.00%	18.18%	7.14%
Colorado	3	0	3	1	0	1	33.33%	0.00%	33.33%
Connecticut	1	1	0						
D.C.									
Delaware	1	1	0						
Florida	16	15	1	5	5	0	31.25%	33.33%	0.00%
Georgia	8	4	4	1	1	0	12.50%	25.00%	0.00%
Guam									
Hawaii	3	3	0						
Iowa	7	4	3						
Idaho	3	3	0						
Illinois	15	8	7	1	1	0	6.67%	12.50%	0.00%
Indiana	7	6	1						
Kansas	5	2	3						
Kentucky	3	1	2						
Louisiana	8	6	2	1	1	0	12.50%	16.67%	0.00%
Massachusetts	8	4	4	3	1	2	37.50%	25.00%	50.00%
Maryland	4	4	0	1	1	0	25.00%	25.00%	0.00%
Maine	3	1	2						
Michigan	9	8	1	2	2	0	22.22%	25.00%	0.00%
Minnesota	7	6	1	1	1	0	14.29%	16.67%	0.00%
Missouri	4	3	1	2	2	0	50.00%	66.67%	0.00%
N. Mariana Is.									
Mississippi	3	3	0	2	2	0	66.67%	66.67%	0.00%
Montana	2	2		1	1	0	50.00%	50.00%	0.00%
North Carolina	13	2	11	1	0	1	7.69%	0.00%	9.09%
North Dakota	1	1	0						
Nebraska	4	4	0	1	1	0	25.00%	25.00%	0.00%
New Hampshire	1	0	1						
New Jersey	5	2	3	1	0	1	20.00%	0.00%	33.33%
New Mexico	3	2	1						
Nevada									
New York	13	9	4	1	1	0	7.69%	11.11%	0.00%
Ohio	10	5	5						
Oklahoma	4	1	3						
Oregon	4	2	2	2	2	0	50.00%	100.00%	0.00%
Pennsylvania	5	1	4	1	0	1	20.00%	0.00%	25.00%
Puerto Rico	2	0	2	1	0	1	50.00%	0.00%	50.00%
Rhode Island	1	1	0						
South Carolina	5	2	3	2	1	1	40.00%	50.00%	33.33%
South Dakota	1	0	1						
Tennessee	4	0	4	1	0	1	25.00%	0.00%	25.00%
Texas	25	16	9	1	1	0	4.00%	6.25%	0.00%
Utah	2	1	1						
Virginia	5	2	3	1	0	1	20.00%	0.00%	33.33%
Virgin Islands									
Vermont	2	1	1						
Washington	9	6	3	2	2	0	22.22%	33.33%	0.00%
Wisconsin	7	7	0	2	2	0	28.57%	28.57%	0.00%
West Virginia	3	0	3						
Wyoming	2	0	2						
Tribe - 05									
Tribe - 06									
Tribe - 07									
Tribe - 08	1	1							
Tribe - 09									
Total	292	172	120	42	31	11	14.38%	18.02%	9.17%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A2.e. Aeromonas - Statistics for All Detections by State (UCMR 1 March 2006 Data)

State [1,2]	Total # Detections	Statistics for Detections (in CFU/100 mL)			
		Minimum	Median	99th Percentile	Maximum
Alaska					
Alabama					
Arkansas					
Arizona	1	0.2	0.2	0.2	0.2
California	8	0.2	1.2	12.8	12.8
Colorado	1	13.4	13.4	13.4	13.4
Connecticut					
D.C.					
Delaware					
Florida	6	0.2	0.2	2.6	2.6
Georgia	6	17	66	380	380
Guam					
Hawaii					
Iowa					
Idaho					
Illinois	6	0.2	4.6	69	69
Indiana					
Kansas					
Kentucky					
Louisiana	1	0.4	0.4	0.4	0.4
Massachusetts	8	0.6	27.8	880	880
Maryland	1	0.2	0.2	0.2	0.2
Maine					
Michigan	3	0.2	0.2	29	29
Minnesota	3	5.6	7.2	27	27
Missouri	4	0.2	0.4	0.4	0.4
N. Mariana Is.					
Mississippi	2	0.8	1	1.2	1.2
Montana	3	0.2	0.2	0.2	0.2
North Carolina	2	0.6	2.7	4.8	4.8
North Dakota					
Nebraska	10	0.2	1	11	11
New Hampshire					
New Jersey	3	1.8	12	28	28
New Mexico					
Nevada					
New York	1	1	1	1	1
Ohio					
Oklahoma					
Oregon	10	0.2	2.6	40	40
Pennsylvania	1	5	5	5	5
Puerto Rico	12	0.2	2.95	800	800
Rhode Island					
South Carolina	2	0.2	0.3	0.4	0.4
South Dakota					
Tennessee	1	0.4	0.4	0.4	0.4
Texas	1	2.8	2.8	2.8	2.8
Utah					
Virginia	1	0.2	0.2	0.2	0.2
Virgin Islands					
Vermont					
Washington	26	0.2	1.6	25.4	25.4
Wisconsin	7	0.2	0.8	6.4	6.4
West Virginia					
Wyoming					
Tribe - 05					
Tribe - 06					
Tribe - 07					
Tribe - 08					
Tribe - 09					
Total	130	0.2	1.6	800	880

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A2.f. Aeromonas - Population Served Level Occurrence by State & Size Category (UCMR 1 March 2006 Data)

State [1,2]	Total # PWSs	Total Population Served by PWSs			Population Served by PWSs with Detections			% Population Served by PWSs with Detections		
		Total	Small	Large	Total	Small	Large	Total	Small	Large
Alaska	1	92	92	0						
Alabama	3	40,908	12,108	28,800						
Arkansas	7	396,347	22,294	374,053						
Arizona	4	1,212,061	12,061	1,200,000	2,880	2,880	0	0.24%	23.88%	0.00%
California	25	3,578,339	24,825	3,553,514	1,515,011	0	1,515,011	42.34%	0.00%	42.63%
Colorado	3	23,900	3,900	20,000	400	400	0	1.67%	10.26%	0.00%
Connecticut	1	72	72	0						
D.C.										
Delaware	1	300	300	0						
Florida	16	1,599,335	23,095	1,576,240	639,687	0	639,687	40.00%	0.00%	40.58%
Georgia	8	54,583	14,323	40,260	91	91	0	0.17%	0.64%	0.00%
Guam										
Hawaii	3	764,305	9,147	755,158						
Iowa	7	45,673	5,098	40,575						
Idaho	3	76,757	8,500	68,257						
Illinois	15	673,952	23,395	650,557	7,104	7,104	0	1.05%	30.37%	0.00%
Indiana	7	234,348	30,930	203,418						
Kansas	5	241,915	10,241	231,674						
Kentucky	3	108,547	7,604	100,943						
Louisiana	8	409,491	12,620	396,871	1,328	1,328	0	0.32%	10.52%	0.00%
Massachusetts	8	2,267,247	2,390	2,264,857	2,074,709	0	2,074,709	91.51%	0.00%	91.60%
Maryland	4	253,162	3,562	249,600	336	336	0	0.13%	9.43%	0.00%
Maine	3	125,435	250	125,185						
Michigan	9	3,547,569	7,992	3,539,577	3,318	3,318	0	0.09%	41.52%	0.00%
Minnesota	7	75,414	11,501	63,913	279	279	0	0.37%	2.43%	0.00%
Missouri	4	11,203	11,203	0	6,300	6,300	0	56.23%	56.23%	0.00%
N. Mariana Is.										
Mississippi	3	3,333	3,333	0	3,033	3,033	0	91.00%	91.00%	0.00%
Montana	2	4,840	4,840	0	2,500	2,500	0	51.65%	51.65%	0.00%
North Carolina	13	1,331,680	18,518	1,313,162	21,762	0	21,762	1.63%	0.00%	1.66%
North Dakota	1	2,267	2,267	0						
Nebraska	4	10,647	10,647	0	8,000	8,000	0	75.14%	75.14%	0.00%
New Hampshire	1	3,000	3,000	0						
New Jersey	5	464,100	8,100	456,000	8,000	8,000	0	1.72%	98.77%	0.00%
New Mexico	3	43,826	2,825	41,001						
Nevada										
New York	13	1,366,143	25,587	1,340,556	670	670	0	0.05%	2.62%	0.00%
Ohio	10	1,310,635	24,038	1,286,597						
Oklahoma	4	289,388	13,388	276,000						
Oregon	4	7,945	7,945	0	1,865	1,865	0	23.47%	23.47%	0.00%
Pennsylvania	5	1,705,419	17,098	1,688,321	1,676,200	0	1,676,200	98.29%	0.00%	99.28%
Puerto Rico	2	29,928	460	29,468	460	460	0	1.54%	100.00%	0.00%
Rhode Island	1	17,500	0	17,500						
South Carolina	5	33,898	11,628	22,270	9,711	9,711	0	28.65%	83.51%	0.00%
South Dakota	1	376	376	0						
Tennessee	4	63,653	15,533	48,120	7,985	7,985	0	12.54%	51.41%	0.00%
Texas	25	1,909,121	45,239	1,863,882	5,145	5,145	0	0.27%	11.37%	0.00%
Utah	2	7,937	7,937	0						
Virginia	5	853,573	1,799	851,774	279	279	0	0.03%	15.51%	0.00%
Virgin Islands										
Vermont	2	19,500	1,000	18,500						
Washington	9	591,766	3,249	588,517	714	714	0	0.12%	21.98%	0.00%
Wisconsin	7	107,397	29,852	77,545	8,194	8,194	0	7.63%	27.45%	0.00%
West Virginia	3	9,928	9,928	0						
Wyoming	2	580	580	0						
Tribe - 05										
Tribe - 06										
Tribe - 07										
Tribe - 08	1	325	325	0						
Tribe - 09										
Total	292	25,929,660	526,995	25,402,665	6,005,961	78,592	5,927,369	23.16%	14.91%	23.33%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A2.g. Aeromonas - Population Served Level Occurrence by State & Source Water Type (UCMR 1 March 2006 Data)

State [1,2]	Total Population Served by PWSs			Population Served by PWSs with Detections			% Pop. Served by PWSs with Detections		
	Total	GW	SW	Total	GW	SW	Total	GW	SW
Alaska	92	92	0						
Alabama	40,908	12,108	28,800						
Arkansas	396,347	46,969	349,378						
Arizona	1,212,061	12,061	1,200,000	2,880	2,880	0	0.24%	23.88%	0.00%
California	3,578,339	892,662	2,685,677	1,515,011	536,011	979,000	42.34%	60.05%	36.45%
Colorado	23,900	0	23,900	400	0	400	1.67%	0.00%	1.67%
Connecticut	72	72	0						
D.C.									
Delaware	300	300	0						
Florida	1,599,335	1,572,687	26,648	639,687	639,687	0	40.00%	40.67%	0.00%
Georgia	54,583	43,351	11,232	91	91	0	0.17%	0.21%	0.00%
Guam									
Hawaii	764,305	764,305	0						
Iowa	45,673	30,735	14,938						
Idaho	76,757	76,757	0						
Illinois	673,952	230,700	443,252	7,104	7,104	0	1.05%	3.08%	0.00%
Indiana	234,348	198,098	36,250						
Kansas	241,915	8,345	233,570						
Kentucky	108,547	100,943	7,604						
Louisiana	409,491	397,472	12,019	1,328	1,328	0	0.32%	0.33%	0.00%
Massachusetts	2,267,247	104,190	2,163,057	2,074,709	29,300	2,045,409	91.51%	28.12%	94.56%
Maryland	253,162	253,162	0	336	336	0	0.13%	0.13%	0.00%
Maine	125,435	250	125,185						
Michigan	3,547,569	68,610	3,478,959	3,318	3,318	0	0.09%	4.84%	0.00%
Minnesota	75,414	43,352	32,062	279	279	0	0.37%	0.64%	0.00%
Missouri	11,203	7,100	4,103	6,300	6,300	0	56.23%	88.73%	0.00%
N. Mariana Is.									
Mississippi	3,333	3,333	0	3,033	3,033	0	91.00%	91.00%	0.00%
Montana	4,840	4,840	0	2,500	2,500	0	51.65%	51.65%	0.00%
North Carolina	1,331,680	2,795	1,328,885	21,762	0	21,762	1.63%	0.00%	1.64%
North Dakota	2,267	2,267	0						
Nebraska	10,647	10,647	0	8,000	8,000	0	75.14%	75.14%	0.00%
New Hampshire	3,000	0	3,000						
New Jersey	464,100	15,100	449,000	8,000	0	8,000	1.72%	0.00%	1.78%
New Mexico	43,826	2,825	41,001						
Nevada									
New York	1,366,143	1,092,121	274,022	670	670	0	0.05%	0.06%	0.00%
Ohio	1,310,635	124,270	1,186,365						
Oklahoma	289,388	188	289,200						
Oregon	7,945	1,865	6,080	1,865	1,865	0	23.47%	100.00%	0.00%
Pennsylvania	1,705,419	8,373	1,697,046	1,676,200	0	1,676,200	98.29%	0.00%	98.77%
Puerto Rico	29,928	0	29,928	460	0	460	1.54%	0.00%	1.54%
Rhode Island	17,500	17,500	0						
South Carolina	33,898	2,367	31,531	9,711	900	8,811	28.65%	38.02%	27.94%
South Dakota	376	0	376						
Tennessee	63,653	0	63,653	7,985	0	7,985	12.54%	0.00%	12.54%
Texas	1,909,121	116,379	1,792,742	5,145	5,145	0	0.27%	4.42%	0.00%
Utah	7,937	1,637	6,300						
Virginia	853,573	1,520	852,053	279	0	279	0.03%	0.00%	0.03%
Virgin Islands									
Vermont	19,500	1,000	18,500						
Washington	591,766	207,255	384,511	714	714	0	0.12%	0.34%	0.00%
Wisconsin	107,397	107,397	0	8,194	8,194	0	7.63%	7.63%	0.00%
West Virginia	9,928	0	9,928						
Wyoming	580	0	580						
Tribe - 05									
Tribe - 06									
Tribe - 07									
Tribe - 08	325	325	0						
Tribe - 09									
Total	25,929,660	6,588,325	19,341,335	6,005,961	1,257,655	4,748,306	23.16%	19.09%	24.55%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A3.a. Diazinon - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	581			33			30,967,264		
	Total	780	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,663	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,306	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A3.b. Diazinon - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	217	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,306	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A3.c. Diazinon - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A4.a. 2,4-Dichlorophenol - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	148			43			79,739		
	3,301 - 10,000	138			28			185,150		
	Total	381	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	67			17			4,744		
	501 - 3,300	66			17			29,902		
	3,301 - 10,000	137			30			198,305		
	Total	270	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		651	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	249			28			792,573		
	> 50,000	584			22			7,207,549		
	Total	833	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	570			32			30,869,424		
	Total	769	0	0.00%	66	0	0.00%	32,161,382	0	0.00%
All Large Systems		1,602	0	0.00%	116	0	0.00%	40,161,504	0	0.00%
All Systems										
Total Water Systems		2,253	0	0.00%	294	0	0.00%	40,669,640	0	0.00%

Table A4.b. 2,4-Dichlorophenol - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	37	2		1	1	
California	725	38	5	8	13	12
Colorado	32	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	95	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	10	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	49	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	32	6	3		2	1
Missouri	32	4	1	1		2
N. Mariana Is.	13	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	47	10	5		3	2
New Mexico	75	8	3	2	3	
Nevada	4	1	1			
New York	115	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	11	3		2		1
Pennsylvania	75	17	8	4	1	4
Puerto Rico	48	6	1	2		3
Rhode Island	11	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	210	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,253	294	114	64	50	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A4.c. 2,4-Dichlorophenol - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	38	9,358,779	12,314	23,867	1,053,905	8,268,693
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	294	40,669,640	275,185	232,951	8,000,122	32,161,382

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A5.a. 2,4-Dinitrophenol - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	148			43			79,739		
	3,301 - 10,000	138			28			185,150		
	Total	381	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	67			17			4,744		
	501 - 3,300	66			17			29,902		
	3,301 - 10,000	137			30			198,305		
	Total	270	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		651	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	249			28			792,573		
	> 50,000	584			22			7,207,549		
	Total	833	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	567			32			30,869,424		
	Total	766	0	0.00%	66	0	0.00%	32,161,382	0	0.00%
All Large Systems		1,599	0	0.00%	116	0	0.00%	40,161,504	0	0.00%
All Systems										
Total Water Systems		2,250	0	0.00%	294	0	0.00%	40,669,640	0	0.00%

Table A5.b. 2,4-Dinitrophenol - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	37	2		1	1	
California	725	38	5	8	13	12
Colorado	29	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	95	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	10	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	49	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	32	6	3		2	1
Missouri	32	4	1	1		2
N. Mariana Is.	13	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	47	10	5		3	2
New Mexico	75	8	3	2	3	
Nevada	4	1	1			
New York	115	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	11	3		2		1
Pennsylvania	75	17	8	4	1	4
Puerto Rico	48	6	1	2		3
Rhode Island	11	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	210	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,250	294	114	64	50	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A5.c. 2,4-Dinitrophenol - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	38	9,456,619	12,314	23,867	1,053,905	8,268,693
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	294	40,767,480	275,185	232,951	8,000,122	32,161,382

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A6.a. 1,2-Diphenylhydrazine - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	581			33			30,967,264		
	Total	780	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,663	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
S										
Total Water Systems		2,306	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A6.b. 1,2-Diphenylhydrazine - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	217	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,306	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A6.c. 1,2-Diphenylhydrazine - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A7.a. Disulfoton - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	610			22			7,207,549		
	Total	882	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	198			34			1,291,958		
	> 50,000	577			33			30,967,264		
	Total	775	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,657	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,300	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A7.b. Disulfoton - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	212	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	65	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,300	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A7.c. Disulfoton - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A8.a. Diuron - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections[1]		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	94			43			10,296		
	501 - 3,300	160			43			79,739		
	3,301 - 10,000	145			28			185,150		
	Total	399	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	68			17			4,744		
	501 - 3,300	67	1	1.49%	17	1	5.88%	29,902	800	2.68%
	3,301 - 10,000	149			30			198,305		
	Total	284	1	0.35%	64	1	1.56%	232,951	800	0.34%
All Small Systems		683	1	0.15%	178	1	0.56%	508,136	800	0.16%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	262			27			770,573		
	> 50,000	596			22			7,207,549		
	Total	858	0	0.00%	49	0	0.00%	7,978,122	0	0.00%
Surface Water	10,001 - 50,000	198			33			1,253,958		
	> 50,000	575			33			30,967,264		
	Total	773	0	0.00%	66	0	0.00%	32,221,222	0	0.00%
All Large Systems		1,631	0	0.00%	115	0	0.00%	40,199,344	0	0.00%
All Systems										
Total Water Systems		2,314	1	0.04%	293	1	0.34%	40,707,480	800	0.002%

[1] The single detection of diuron (equal to 2.1 ug/L) was found in a NTNCWS in California.

Table A8.b. Diuron - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	34	2		1	1	
California	737	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	8	3	2	1		
Kentucky	34	7		2	1	4
Louisiana	60	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	36	4	1	1		2
N. Mariana Is.	21	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	53	10	5		3	2
New Mexico	79	8	3	2	3	
Nevada	4	1	1			
New York	135	11	2	1	4	4
Ohio	20	7	3	1	2	1
Oklahoma	8	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	49	6	1	2		3
Rhode Island	12	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	52	9	1	5	1	2
Texas	226	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	23	5	3	1		1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,314	293	114	64	49	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A8.c. Diuron - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	11	7,289,997	740	8,888	644,310	6,636,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	5	1,232,766	10,289	1,313		1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	293	40,707,480	275,185	232,951	7,978,122	32,221,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A9.a. Linuron - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	94			43			10,296		
	501 - 3,300	160			43			79,739		
	3,301 - 10,000	145			28			185,150		
	Total	399	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	68			17			4,744		
	501 - 3,300	67			17			29,902		
	3,301 - 10,000	149			30			198,305		
	Total	284	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		683	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	259			27			770,573		
	> 50,000	596			22			7,207,549		
	Total	855	0	0.00%	49	0	0.00%	7,978,122	0	0.00%
Surface Water	10,001 - 50,000	198			33			1,253,958		
	> 50,000	575			33			30,967,264		
	Total	773	0	0.00%	66	0	0.00%	32,221,222	0	0.00%
All Large Systems		1,628	0	0.00%	115	0	0.00%	40,199,344	0	0.00%
All Systems										
Total Water Systems		2,311	0	0.00%	293	0	0.00%	40,707,480	0	0.00%

Table A9.b. Linuron - Number of PWSs by State (UCMR March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	34	2		1	1	
California	737	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	8	3	2	1		
Kentucky	34	7		2	1	4
Louisiana	60	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	36	4	1	1		2
N. Mariana Is.	21	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	53	10	5		3	2
New Mexico	79	8	3	2	3	
Nevada	4	1	1			
New York	132	11	2	1	4	4
Ohio	20	7	3	1	2	1
Oklahoma	8	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	49	6	1	2		3
Rhode Island	12	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	52	9	1	5	1	2
Texas	226	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	23	5	3	1		1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,311	293	114	64	49	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A9.c. Linuron - Total Population-Served by State (UCMR March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	11	7,289,997	740	8,888	644,310	6,636,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	5	1,232,766	10,289	1,313		1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	293	40,707,480	275,185	232,951	7,978,122	32,221,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A10.a. LL-Nitrobenzene - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	581			33			30,967,264		
	Total	780	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,663	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,306	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A10.b. LL-Nitrobenzene - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	217	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,306	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A10.c. LL-Nitrobenzene - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A11.a. 2-Methyl-phenol - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	148			43			79,739		
	3,301 - 10,000	138			28			185,150		
	Total	381	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	67			17			4,744		
	501 - 3,300	66			17			29,902		
	3,301 - 10,000	137			30			198,305		
	Total	270	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		651	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	249			28			792,573		
	> 50,000	584			22			7,207,549		
	Total	833	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	570			32			30,869,424		
	Total	769	0	0.00%	66	0	0.00%	32,161,382	0	0.00%
All Large Systems		1,602	0	0.00%	116	0	0.00%	40,161,504	0	0.00%
All Systems										
Total Water Systems		2,253	0	0.00%	294	0	0.00%	40,669,640	0	0.00%

Table A11.b. 2-Methyl-phenol - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	37	2		1	1	
California	725	38	5	8	13	12
Colorado	32	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	95	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	10	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	49	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	32	6	3		2	1
Missouri	32	4	1	1		2
N. Mariana Is.	13	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	47	10	5		3	2
New Mexico	75	8	3	2	3	
Nevada	4	1	1			
New York	115	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	11	3		2		1
Pennsylvania	75	17	8	4	1	4
Puerto Rico	48	6	1	2		3
Rhode Island	11	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	210	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,253	294	114	64	50	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A11.c. 2-Methyl-phenol - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	38	9,456,619	12,314	23,867	1,053,905	8,268,693
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	294	40,767,480	275,185	232,951	8,000,122	32,161,382

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A12.a. Molinate - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections[1]		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,525			1,190			26,929,381		
	> 50,000	5,422	1	0.02%	190	1	0.53%	26,476,158	457,511	1.73%
	Total	15,947	1	0.01%	1,380	1	0.07%	53,405,539	457,511	0.86%
Surface Water	10,001 - 50,000	7,425			1,187			33,405,163		
	> 50,000	7,176			509			136,681,205		
	Total	14,601	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,548	1	0.00%	3,076	1	0.03%	223,491,907	457,511	0.20%
All Systems										
Total Water Systems[2]		33,799	1	0.003%	3,873	1	0.03%	226,252,477	457,511	0.20%

[1] The single detection of molinate (equal to 5.7 ug/L) was found in a CWS in California.

[2] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table A12.b. Molinate - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	239	47	9	4	14	20
Arizona	1,314	59	11	1	34	13
California	8,567	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,166	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	400	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	319	76	23	4	26	23
Massachusetts	1,135	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,325	160	21	8	50	81
Ohio	548	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	106	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	683	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,799	3,873	590	207	1,380	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A12.c. Molinate - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	76	2,685,825	75,303	13,120	807,125	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,873	226,252,477	1,939,815	820,755	53,405,539	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A13.a. Nitrobenzene - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections[1]		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	871			244			439,011		
	3,301 - 10,000	1,211			234			1,470,717		
	Total	2,341	0	0.00%	589	0	0.00%	1,937,327	0	0.00%
Surface Water	25 - 500	224			52			16,662		
	501 - 3,300	183			45			91,723		
	3,301 - 10,000	520			110			712,370		
	Total	927	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,268	0	0.00%	796	0	0.00%	2,758,082	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,328	1	0.01%	1,186	1	0.08%	26,796,362	16,990	0.06%
	> 50,000	5,524			189			26,361,273		
	Total	15,852	1	0.01%	1,375	1	0.07%	53,157,635	16,990	0.03%
Surface Water	10,001 - 50,000	7,347			1,182			33,201,855		
	> 50,000	7,109	1	0.01%	508	1	0.20%	136,615,205	238,368	0.17%
	Total	14,456	1	0.01%	1,690	1	0.06%	169,817,060	238,368	0.14%
All Large Systems		30,308	2	0.01%	3,065	2	0.07%	222,974,695	255,358	0.11%
All Systems										
Total Water Systems[2]		33,576	2	0.01%	3,861	2	0.05%	225,732,777	255,358	0.11%

[1] The two detections of nitrotbenzene were found in CWSs in Florida. The GW detection was equal to 21.6 ug/L; the SW detection was equal to 100.0 ug/L.

[2] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table A13.b. Nitrobenzene - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	614	88	12	3	24	49
Arkansas	229	47	9	4	14	20
Arizona	1,278	59	11	1	34	13
California	8,568	407	26	22	152	207
Colorado	397	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,162	238	31		189	18
Georgia	564	99	13	8	23	55
Guam	267	5		1	1	3
Hawaii	392	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	247	21	6	2	11	2
Illinois	745	133	26	2	58	47
Indiana	410	86	19	1	45	21
Kansas	248	41	10	2	13	16
Kentucky	354	77	2	7	6	62
Louisiana	477	84	23	4	34	23
Massachusetts	1,125	132	10	2	58	62
Maryland	172	36	7	1	11	17
Maine	91	19	4	2	2	11
Michigan	363	71	21	3	17	30
Minnesota	431	85	16		59	10
Missouri	452	68	17	3	26	22
N. Mariana Is.	19	2	1	1		
Mississippi	525	72	30		40	2
Montana	141	13	4	2	2	5
North Carolina	1,046	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	231	20	8		10	2
New Hampshire	134	21	4	2	4	11
New Jersey	1,014	123	14	2	70	37
New Mexico	353	32	6	2	19	5
Nevada	73	11	3	1	1	6
New York	2,364	160	21	8	50	81
Ohio	544	153	24	4	61	64
Oklahoma	320	52	7	8	8	29
Oregon	355	55	6	5	14	30
Pennsylvania	1,258	165	21	16	22	106
Puerto Rico	720	85	4	5	20	56
Rhode Island	104	13	2		4	7
South Carolina	288	59	5	6	10	38
South Dakota	101	17	3	1	5	8
Tennessee	546	105	2	12	17	74
Texas	1,721	264	61	10	65	128
Utah	475	52	4	3	13	32
Virginia	297	58	13	3	1	41
Virgin Islands	26	4		2		2
Vermont	40	10	3	1		6
Washington	684	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	171	35		10	3	22
Wyoming	70	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	17	3	1	1		1
Total	33,576	3,861	589	207	1,375	1,690

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A13.c. Nitrobenzene - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	88	3,709,549	67,068	7,389	587,634	3,047,458
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	99	6,732,757	26,148	33,086	700,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	84	2,818,393	75,303	13,120	939,693	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	123	7,839,337	60,020	16,300	1,910,382	5,852,635
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	264	16,700,665	228,336	22,737	2,839,792	13,609,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,861	225,732,777	1,937,327	820,755	53,157,635	169,817,060

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A14.a. Prometon - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	581			33			30,967,264		
	Total	780	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,663	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,306	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A14.b. Prometon - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	217	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,306	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A14.c. Prometon - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A15.a. Terbufos - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	198			34			1,291,958		
	> 50,000	577			33			30,967,264		
	Total	775	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,658	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,301	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table A15.b. Terbufos - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	212	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,301	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A15.c. Terbufos - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A16.a. 2,4,6-Trichlorophenol - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	148			43			79,739		
	3,301 - 10,000	138			28			185,150		
	Total	381	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	67			17			4,744		
	501 - 3,300	66			17			29,902		
	3,301 - 10,000	137			30			198,305		
	Total	270	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		651	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	249			28			792,573		
	> 50,000	584			22			7,207,549		
	Total	833	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	570			32			30,869,424		
	Total	769	0	0.00%	66	0	0.00%	32,161,382	0	0.00%
All Large Systems		1,602	0	0.00%	116	0	0.00%	40,161,504	0	0.00%
All Systems										
Total Water Systems		2,253	0	0.00%	294	0	0.00%	40,669,640	0	0.00%

Table A16.b. 2,4,6-Trichlorophenol - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	22	5	2	2		1
Arizona	37	2		1	1	
California	725	38	5	8	13	12
Colorado	32	6	1	3		2
Connecticut	22	2		1		1
D.C.						
Delaware						
Florida	95	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	8	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	10	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	49	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	29	8	6	1		1
Minnesota	32	6	3		2	1
Missouri	32	4	1	1		2
N. Mariana Is.	13	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	47	10	5		3	2
New Mexico	75	8	3	2	3	
Nevada	4	1	1			
New York	115	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	11	3		2		1
Pennsylvania	75	17	8	4	1	4
Puerto Rico	48	6	1	2		3
Rhode Island	11	2				2
South Carolina	14	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	210	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,253	294	114	64	50	66

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table A16.c. 2,4,6-Trichlorophenol - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	38	9,358,779	12,314	23,867	1,053,905	8,268,693
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	294	40,669,640	275,185	232,951	8,000,122	32,161,382

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Appendix B. Detailed Description of Stage 2 (Bayesian-Based) Hierarchical Model

Appendix B. Detailed Description of the Stage 2 Analysis -- The Bayesian-Based Hierarchical Model [1]

General Description of Bayesian Statistics

Bayesian statistics are named after the English mathematician Reverend Thomas Bayes, who first used probability inductively and established a mathematical basis for probability inference and information updating. Although Rev. Bayes' original work was not intended for combining information, the Bayesian approach is nevertheless most suitable for combining information contained in the single experiment data as well as knowledge accumulated before the experiment. The core Bayesian definition of a subjective probability (probability is defined as the degree of belief) enables the Bayesian to update information and combine information from different, but related, situations or experiments. This type of approach considers not only what information is contained in the specific situation (or data) directly being assessed, but what outside expertise or information might also contribute to an understanding of the situation being assessed (á priori information or the prior). Considering prior information is consistent with the common scientific approach. A scientific study always starts with a summary of existing knowledge of the subject matter to propose a new hypothesis. Data are then collected to test the hypothesis. New conclusions are drawn based on the results.

Because of the subjective probability definition, Bayesian inference is best suited to problems that involve making decisions under uncertainty. Uncertain knowledge is summarized in terms of prior probability in Bayes' Theorem. In the context of statistical modeling, this prior knowledge is typically in the form of a probability density function, a mathematical expression that defines the likelihood of an event occurring. The prior knowledge can be based on the results of other experiments, on expert opinion, or actual existing data. The Bayesian analytical approach starts with initial or prior knowledge and then uses data to improve upon the initial state of knowledge.

In the context of statistical estimations of occurrence of the unregulated contaminants being assessed under the UCMR, there is little prior information. Consequently, a special class of prior distributions that represents no or little information is used. The information in the data is expressed in terms of a likelihood function, which is a mathematical expression about the probability of observing the data. Using Bayes' Theorem, the priors and the likelihood are combined to yield posterior distributions. A posterior distribution represents what is now believed about the original parameter (the prior) in light of the supplemental data. The posterior distribution can be used as prior for a future similar study.

Estimating System Mean Concentrations

It is a common assumption that water data follow a log-normal distribution (Ott, 1995). The Bayesian-based model described here is based on the assumption that the contaminant concentrations at each system are log-normally distributed with an unknown mean and unknown variance. The priors in this analysis are the probability distributions for the system means and

[1] Full references for all cited documents are included in the body of the report.

variances. Once the prior distribution has been established, a two-level statistical model is built. The lower-level features the observed concentrations (analytical detections and non-detections), which are treated as coming from a log-normal distribution. The upper-level features the unknown parameters (system mean and within-system variance) of the log-normal probability distribution of each system, whose values are estimated based on the detections and non-detections. These system means are further summarized to develop the national distribution of system means with two additional parameters (mean of the system means and between-system variance). Thus, the Bayesian-based approach allows the model to produce a conditional distribution of occurrence characteristics that are currently unknown (system mean, within-system variance, mean of system mean, and between-system variance) as a function of the known data (the analytical detections and non-detections).[2]

By pooling evidence (data) from many observations for hundreds or thousands of PWSIDs, this model estimates the mean concentration and standard deviation for each system using a Bayesian-based approach. An advantage of this model is that it allows for "borrowing of strength" in estimation between neighboring strata (Lockwood et al. 2001). For example, when a particular stratum (say, ground water systems serving less than 500 people) has either no or very few observations, its parameter estimates are shrunk toward the nearest strata that have data (e.g., ground water systems serving between 501-3,301 people). Thus, this process improves estimates for all strata.

A historical limitation of using Bayesian methods was that analytical solutions for the required computations were available for a limited number of parameters (The Cadmus Group, 2001). The amount of parameters in this analysis exceeded this limit, making it impossible to generate estimates by use of Bayes' Theorem. However, the advent of fast and inexpensive computing has promoted the development of several methods of performing Bayesian inference (The Cadmus Group, 2001). The method used for this analysis is based on Monte Carlo sampling.

The Monte Carlo method is, in general terms, any technique using random numbers to model some sort of a process. (This technique works particularly well when the process is one where the underlying probability distributions are known, but the results are more difficult to determine.) In a Monte Carlo simulation, the value used for each variable is selected randomly from the defined probability distribution. Many simulations are then performed and the desired result is taken as an average over the number of observations (which may be a single observation or perhaps millions of observations).

A Markov chain Monte Carlo method was used for this analysis. Markov chain Monte Carlo (MCMC) is an important technique used with Bayesian statistics to sample from the posterior distribution. MCMC generates a chain that converges, in distribution, on the posterior parameter distribution, that can be regarded as a sample from the posterior distribution (The Cadmus Group, 2001). Using these samples, it is then possible to calculate the statistics of interest (mean concentration and standard deviation). This technique also provides a means to generate a random sequence of model output that may be used to make inferences about the model uncertainties that derive from measurement uncertainties.

[2] Although actual numerical values are unknown for the non-detections, they are known to be less than the MRL.

This Bayesian-based hierarchical model can be summarized by the following equations:

$$Y_{hijk} \sim \text{Normal}(\mu_{hij}, \sigma_{hi}^2)\text{I}(, C_{hijk})$$

where Y_{hijk} is the log of the k^{th} concentration value in the jth system in the i^{th} category in the h^{th} stratum (if Y_{hijk} is a non-detect, the value C_{hijk} is the detection limit or MRL), σ_{hi}^2 is the common within-system variance for the ith category in the hth stratum. The system mean μ_{hij} is further modeled as from another normal distribution:

$$\mu_{hij} \sim \text{Normal}(\mu_{hi,} \sigma_h^2)$$

where μ_{hi} represents the mean of system means for the ith category and hth stratum (or the category mean), and σ_h^2 is the between-system variance. The full hierarchical model further constrains the mean parameter μ_{hi} by using two higher-level normal distributions:

$$\mu_{hi} \sim \text{Normal}(\mu_h, \sigma^2)$$

and

$$\mu_h \sim \text{Normal}(\mu, \tau^2)$$

where μ_h is the mean of category means for the hth stratum (or the stratum mean), σ^2 is the between category variance, and μ, τ^2 are the hyper-parameters that define the distribution of stratum mean. When evaluating the national distribution of system means, we use the estimated system means μ_{hij} to form empirical CDFs. Because the arithmetic system mean is of interest, the estimated arithmetic mean is $\mu_{hij}^{\text{A}} = \exp(\mu_{hij} + 0.5\ \sigma_h^2)$. When each system is sampled with an equal weight, the estimated μ_{hij}^{A} values are treated equally. For example, the empirical CDF can be estimated by calculating the fraction of systems with estimated mean less than a given concentration value. When the systems are sampled with unequal weights, the empirical CDF at a given concentration value is the sum of the weights of those systems with an estimated mean less than the concentration value. Because the model parameters are estimated using a Markov chain Monte Carlo (MCMC) simulation method, the same CDF is estimated repeatedly. Each iteration represents a possible estimate of the CDF. Consequently, each iteration can be used to summarize uncertainty in the estimated CDF. The exceedance probability is (1 - CDF value) estimated at the threshold concentration. When the empirical CDF is estimated separately for each category and each stratum, category- and stratum-specific exceedance probabilities can be estimated.

Computer Code

The actual Bayesian-based, probabilistic modeling code used for UCMR 1 Stage 2 DCPA degradate occurrence analyses is presented in full below.

```
setwd(base)
dataDir <_ paste(base, "Data", sep="/")
library(R2WinBUGS)
library(BRugs)
## my bugs files ##
source("c:/users/song/mybugs.r")
##

DCPA.small<_ read.table(paste(dataDir, "DCPASmall.csv", sep="/"), header=T, sep=",")
DCPA.large<_ read.table(paste(dataDir, "DCPALarge2.csv", sep="/"), header=T, sep=",")

names(DCPA.small)
# [1] "State"          "PWSID"          "Weights"        "Size"
# [5] "GW.SW"          "PopServed"      "Results.sign"   "Results.value"
# [9] "FacID"          "SPID"           "Sample.pt.type" "Sample.ID"
#[13] "Parameter"      "PWS.Type"       "Date"           "Analytical.meth"

#sub.data <_ list()
#for (i in 1:length(unique(allUCMR.data$Contaminant))){
#    sub.data[[i]] <_ allUCMR.data[
allUCMR.data$Contaminant==sort(unique(allUCMR.data$Contaminant))[i],  ]
#}

## find a unique stratum_category identification:
#          state + system type(CSW or NTNCWS) + Source type (GW or SW) +
#          Size (1, 2, 3 for the weight file and SizeCat11.pt for the actual data set
#               substring (levels(SizeCat11.pt), 1, 1) == a | b, c|d, e )

bugsin.UCMR <_ function(infile = DCPAsmall){
# This version sorts the data by system id (pwsid)
#   for calculating both strata means and systems means.
# cuts: concentration range where CDF will be estimated
# cr: critical values in original scale
   oo <_ order(infile$PWSID)
   infile <_ infile[oo,  ]
   y <_ log(infile$Results.value)
   n <_ length(y)
   Source <_ as.numeric(ordered(substring(infile$GW.SW,1,1)))  # 1=G, 2=S
   I <_ length(unique(Source))
   pops <_ substring(infile$Size,1,1)
   Strata <_ paste(pops, Source, sep = ".")
   M <_ length(unique(Strata))
   Strata <_ as.numeric(ordered(Strata))
   pwsid <_ as.numeric(ordered(infile$PWSID))
   npwsid <_ as.vector(table(pwsid))
```

```
   mstrata <_ Strata[cumsum(npwsid)]
   L <_ length(unique(pwsid))
   cj <_ y
   y[infile$Results.sign=="lt"] <_ NA
   bugs.dat <_ list(n = n, M = M, L = L, y = y, cj = cj, strata = mstrata, pwsid = pwsid)
   yi <_ cj
   yi[infile$Results.sign=="eq"] <_ NA
   init1 <_ list(y = 0.5*yi, munation = 0, prec = rep(9, M+2), musys = rep(_1, L), mustrata = rep( 1, M))
   init2 <_ list(y = 0.4*yi, munation = 1, prec = rep(2, M+2), musys = rep(0 , L), mustrata = rep( 0, M))
   init3 <_ list(y = 0.3*yi, munation =_1, prec = rep(1, M+2), musys = rep(1 , L), mustrata = rep(_1, M))
   inits <_ list (init1, init2, init3)
   parameters <_ c("munation","mustrata","musys","sigma")
# BUGS files
   return(list(para=parameters, data=bugs.dat, inits=inits))
}


#############################################################################
## BRugs
#input.to.bugs <_ bugsin.UCMR (infile=DCPA.small)
#bugsoutDCPA.small <_ my.bugs(input.to.bugs$data, input.to.bugs$inits)

n.chains <_ 3
n.iter<_50000
n.burnin<_floor(n.iter/2)
para <_ c("munation","mustrata","cbar")

modelCheck(paste(base, "censorUCMR.txt",sep="/"))  ##Checks model _ equivalent to check model
button
modelData("data.txt") ##Checks data _ equivalent to load data button

modelCompile(numChains = n.chains)
modelInits('inits1.txt')   ##Checks initial values _ equivalent to load inits button
modelInits('inits2.txt')
modelInits('inits3.txt')
samplesSet(para)

modelUpdate(numUpdates=n.iter)
samplesCoda("*", stem="./ ", beg = floor(n.iter / 2),
   thin = max(1, floor(n.chains * (n.iter _ n.burnin) / 1500)))
bugsout.small <_ my.sims(parameters.to.save=para,
   n.chains=3, n.iter=n.iter, n.burnin=floor(n.iter/2),
   n.thin=max(1, floor(n.chains * (n.iter _ n.burnin) / 1500)), DIC = TRUE)


#input.to.bugs <_ bugsin.UCMR (infile=DCPA.large)
#bugsoutDCPA.large <_ my.bugs(input.to.bugs$data, input.to.bugs$inits)
```

```
modelCheck(paste(base, "censorUCMR.txt",sep="/"))  ##Checks model _ equivalent to check model
button
modelData("data.txt") ##Checks data _ equivalent to load data button

modelCompile(numChains = n.chains)
modelInits('inits1.txt')   ##Checks initial values _ equivalent to load inits button
modelInits('inits2.txt')
modelInits('inits3.txt')
samplesSet(para)

modelUpdate(numUpdates=n.iter)
samplesCoda("*", stem="./ ", beg = floor(n.iter / 2),
   thin = max(1, floor(n.chains * (n.iter _ n.burnin) / 1500)))
bugsout.large <_ my.sims(parameters.to.save=para,
   n.chains=3, n.iter=n.iter, n.burnin=floor(n.iter/2),
   n.thin=max(1, floor(n.chains * (n.iter _ n.burnin) / 1500)), DIC = TRUE)
###############


4 BRugsFit
samplesHistory("*", mfrow = c(4, 2)) # plot the chain,
samplesDensity("alpha") # plot the densities,
samplesBgr("alpha[1:6]") # plot the bgr statistics, and
samplesAutoC("alpha[1:6]", 1) # plot autocorrelations of 1st chain
## switch back to the previous working directory:
setwd(oldwd)
## Not run:
# Getting more (online_)help:
help.BRugs()
## End(Not run)


#############################################################################################
dataset <_ "DCPA"
cr <_ c(1, 35, 70) ## DCPA

   Strata.ID <_ function(infile){
      oo <_ order(infile$PWSID)
      temp <_ infile[oo,  ]
      Source <_ as.numeric(ordered(substring(temp$GW.SW,1,1)))  # 1=G, 2=S
      pops <_ substring(temp$Size,1,1)
      Strata <_ as.numeric(ordered(paste(pops, Source, sep = ".")))
      pwsid <_ as.numeric(ordered(temp$PWSID))
      npwsid <_ as.vector(table(pwsid))
      mstrata <_ Strata[cumsum(npwsid)]
      return(mstrata)
   }


strataID.small <_ Strata.ID(infile=DCPA.small)
strataID.large <_ Strata.ID(infile=DCPA.large)
```

```
## sProb should be part of each input data set

# small systems
small.sims <_ bugsout.small$sims.list$cbar

temp.small <_ strataID.small==1 | strataID.small==3 | strataID.small==5
temp <_ apply(small.sims[,temp.small], 1, FUN=function(x, CR, sProb){# function(x, CR){  ## FUN =
            prob<_ numeric()
            for (i in 1:length(CR)){
               #prob[i] <_ sum(x>=CR[i])/length(x)
                  ## For sampling probability correction:
               prob[i] <_ sum(sProb[x>=CR[i]])/sum(sProb)
                  ## sProb[] is the sampling probability vector
            }
            return(prob)
}, CR=cr, sProb)
GW.small.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==1
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.small.1 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==3
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.small.2 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==5
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.small.3 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))
```

```
temp <_ apply(small.sims[,!temp.small], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.small.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==2
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.small.1 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==4
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.small.2 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.small.i <_ strataID.small==6
temp <_ apply(small.sims[,temp.small.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.small.3 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))



temp <_ apply(small.sims, 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
```

```
            }
            return(prob)
}, CR=cr)
small.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x, na.rm=T)/sqrt(length(x)),
quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))


# large systems
large.sims <_ bugsout.large$sims.list$cbar
temp.large <_ strataID.large==1 | strataID.large==3
temp <_ apply(large.sims[,temp.large], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.large.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.large.i <_ strataID.large==1
temp <_ apply(large.sims[,temp.large.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.large.1 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.large.i <_ strataID.large==3
temp <_ apply(large.sims[,temp.large.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
GW.large.2 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))



temp <_ apply(large.sims[,!temp.large], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
```

```
SW.large.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.large.i <_ strataID.large==2
temp <_ apply(large.sims[,temp.large.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.large.1 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))

temp.large.i <_ strataID.large==4
temp <_ apply(large.sims[,temp.large.i], 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
SW.large.2 <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x,
na.rm=T)/sqrt(length(x)), quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))


temp <_ apply(large.sims, 1, FUN=function(x, CR){
            prob<_ numeric()
            for (i in 1:length(CR)){
               prob[i] <_ sum(x>=CR[i])/length(x)
            }
            return(prob)
}, CR=cr)
large.All <_ apply(temp, 1, FUN=function(x)return(c(mean(x, na.rm=T), sd(x, na.rm=T)/sqrt(length(x)),
quantile(x, prob=c(0.025, 0.05, 0.5, 0.95, 0.975)))))



write(t(GW.small.All), file=paste(dataset, "smallGW2.txt", sep=""), ncol=dim(GW.small.All)[2],
append=F)
write(t(GW.small.1), file=paste(dataset, "smallGW2.txt", sep=""), ncol=dim(GW.small.1)[2], append=T)
write(t(GW.small.2), file=paste(dataset, "smallGW2.txt", sep=""), ncol=dim(GW.small.2)[2], append=T)
write(t(GW.small.3), file=paste(dataset, "smallGW2.txt", sep=""), ncol=dim(GW.small.3)[2], append=T)

write(t(SW.small.All), file=paste(dataset, "smallSW2.txt", sep=""), ncol=dim(SW.small.All)[2],
append=F)
write(t(SW.small.1), file=paste(dataset, "smallSW2.txt", sep=""), ncol=dim(SW.small.1)[2], append=T)
write(t(SW.small.2), file=paste(dataset, "smallSW2.txt", sep=""), ncol=dim(SW.small.2)[2], append=T)
write(t(SW.small.3), file=paste(dataset, "smallSW2.txt", sep=""), ncol=dim(SW.small.3)[2], append=T)
```

```
write(t(GW.large.All), file=paste(dataset, "largeGW2.txt", sep=""), ncol=dim(GW.large.All)[2],
append=F)
write(t(GW.large.1), file=paste(dataset, "largeGW2.txt", sep=""), ncol=dim(GW.large.1)[2], append=T)
write(t(GW.large.2), file=paste(dataset, "largeGW2.txt", sep=""), ncol=dim(GW.large.2)[2], append=T)

write(t(SW.large.All), file=paste(dataset, "largeSW2.txt", sep=""), ncol=dim(SW.large.All)[2],
append=F)
write(t(SW.large.1), file=paste(dataset, "largeSW2.txt", sep=""), ncol=dim(SW.large.1)[2], append=T)
write(t(SW.large.2), file=paste(dataset, "largeSW2.txt", sep=""), ncol=dim(SW.large.2)[2], append=T)

write(t(large.All), file=paste(dataset, "All2.txt", sep=""), ncol=dim(large.All)[2], append=F)
write(t(small.All), file=paste(dataset, "All2.txt", sep=""), ncol=dim(small.All)[2], append=T)
```

Appendix C. Stage 2 Occurrence Measures for DCPA Degradates

Table C1.a. DCPA Degradates - Stage 2 Occurrence Results - Best Estimate and Confidence Intervals Based on the Number of SMALL Systems

Source Water Type	Population Served	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval
		Threshold = 70 µg/L			Threshold = 35 µg/L			Threshold = 1 µg/L		
Ground Water	≤ 500	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**2.2%**	2.2% - 2.3%	2.2% - 2.3%
	501 - 3,300	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.71%**	0.69% - 0.73%	0.69% - 0.72%
	3,301 - 10,000	**0.81%**	0.80% - 0.83%	0.80% - 0.83%	**0.89%**	0.88% - 0.89%	0.89% - 0.89%	**1.2%**	1.2% - 1.3%	1.2% - 1.2%
	Total	**0.15%**	0.15% - 0.16%	0.15% - 0.16%	**0.17%**	0.17% - 0.17%	0.17% - 0.17%	**1.4%**	1.4% - 1.4%	1.4% - 1.4%
Surface Water	≤ 500	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.00061%**	0% - 0.0018%	0% - 0.0016%
	501 - 3,300	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.45%**	0.40% - 0.50%	0.41% - 0.49%
	3,301 - 10,000	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.0026%**	0% - 0.0061%	0% - 0.0055%
	Total	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.099%**	0.088% - 0.11%	0.090% - 0.11%
All Small Systems - Combined Ground & Surface Water		**0.11%**	0.11% - 0.12%	0.11% - 0.11%	**0.12%**	0.12% - 0.12%	0.12% - 0.12%	**1.1%**	1.1% - 1.1%	1.1% - 1.1%

The Stage 2 occurrence estimates are based on the July 2005 UCMR 1 data.

Table C1.b. DCPA Degradates - SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 70 µg/L)

Source Water Type	Population Served	Total Number of Small Systems Nationally	National Estimate of Small Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	≤ 500	41,415	0	0	-	0	0	-	0
	501 - 3,300	12,128	0	0	-	0	0	-	0
	3,301 - 10,000	2,529	21	20	-	21	20	-	21
	GW Total [3]	**56,072**	86	84	-	87	85	-	87
Surface Water	≤ 500	1,639	0	0	-	0	0	-	0
	501 - 3,300	1,659	0	0	-	0	0	-	0
	3,301 - 10,000	1,044	0	0	-	0	0	-	0
	SW Total [3]	**4,342**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**60,414**	68	67	-	70	68	-	69

[1] National estimates are based on extrapolated small system data.

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C1.c. DCPA Degradates - SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 35 µg/L)

Source Water Type	Population Served	Total Number of Small Systems Nationally	National Estimate of Small Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	≤ 500	41,415	0	0	-	0	0	-	0
	501 - 3,300	12,128	0	0	-	0	0	-	0
	3,301 - 10,000	2,529	22	22	-	23	22	-	23
	GW Total [3]	**56,072**	94	93	-	94	93	-	94
Surface Water	≤ 500	1,639	0	0	-	0	0	-	0
	501 - 3,300	1,659	0	0	-	0	0	-	0
	3,301 - 10,000	1,044	0	0	-	0	0	-	0
	SW Total [3]	**4,342**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**60,414**	75	74	-	75	74	-	75

[1] National estimates are based on extrapolated small system data.

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C1.d. DCPA Degradates - SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 1 µg/L)

Source Water Type	Population Served	Total Number of Small Systems Nationally	National Estimate of Small Systems Exceeding the Specified Threshold [1,2]					
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval	
Ground Water	≤ 500	41,415	923	911	-	935	913 -	933
	501 - 3,300	12,128	86	83	-	88	84 -	88
	3,301 - 10,000	2,529	31	30	-	32	30 -	32
	GW Total [3]	**56,072**	789	781	-	797	782 -	796
Surface Water	≤ 500	1,639	0	0	-	0	0 -	0
	501 - 3,300	1,659	7	7	-	8	7 -	8
	3,301 - 10,000	1,044	0	0	-	0	0 -	0
	SW Total [3]	**4,342**	4	4	-	5	4 -	5
Total Ground & Surface Water [3]		**60,414**	645	638	-	652	639 -	651

[1] National estimates are based on extrapolated small system data.

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C1.e. DCPA Degradates - Stage 2 Occurrence Results - Best Estimate and Confidence Intervals Based on the Population Served by SMALL Systems

Source Water Type	Population Served	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval
		Threshold = 70 µg/L			Threshold = 35 µg/L			Threshold = 1 µg/L		
Ground Water	≤ 500	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**2.8%**	2.7% - 2.8%	2.7% - 2.8%
	501 - 3,300	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**1.75%**	1.69% - 1.81%	1.70% - 1.80%
	3,301 - 10,000	**0.35%**	0.34% - 0.35%	0.34% - 0.35%	**0.38%**	0.38% - 0.38%	0.38% - 0.38%	**0.7%**	0.6% - 0.8%	0.6% - 0.8%
	Total	**0.07%**	0.07% - 0.07%	0.07% - 0.07%	**0.08%**	0.08% - 0.08%	0.08% - 0.08%	**1.9%**	1.9% - 1.9%	1.9% - 1.9%
Surface Water	≤ 500	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.00024%**	0% - 0.0007%	0% - 0.0006%
	501 - 3,300	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.22%**	0.19% - 0.25%	0.19% - 0.25%
	3,301 - 10,000	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.0011%**	0% - 0.0027%	0% - 0.0024%
	Total	**0%**	0% - 0%	0% - 0%	**0%**	0% - 0%	0% - 0%	**0.045%**	0.039% - 0.05%	0.040% - 0.05%
All Small Systems - Combined Ground & Surface Water		**0.05%**	0.05% - 0.05%	0.05% - 0.05%	**0.05%**	0.05% - 0.05%	0.05% - 0.05%	**1.3%**	1.2% - 1.3%	1.2% - 1.3%

The Stage 2 occurrence estimates are based on the July 2005 UCMR 1 data.

Table C1.f. DCPA Degradates - Population Served by SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 70 µg/L)

Source Water Type	Population Served	Total Pop. Served by Small Systems Nationally	National Estimate of Population Served by Small Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	≤ 500	6,231,348	0	0	-	0	0	-	0
	501 - 3,300	15,602,332	0	0	-	0	0	-	0
	3,301 - 10,000	14,390,656	50,200	49,300	-	51,000	49,500	-	50,900
	GW Total [3]	**36,224,336**	26,200	25,800	-	26,700	25,900	-	26,600
Surface Water	≤ 500	306,256	0	0	-	0	0	-	0
	501 - 3,300	2,674,107	0	0	-	0	0	-	0
	3,301 - 10,000	6,209,891	0	0	-	0	0	-	0
	SW Total [3]	**9,190,254**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**45,414,590**	21,500	21,200	-	21,900	21,200	-	21,800

[1] National estimates are based on extrapolated small system data.

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C1.g. DCPA Degradates - Population Served by SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 35 µg/L)

Source Water Type	Population Served	Total Pop. Served by Small Systems Nationally	National Estimate of Population Served by Small Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	≤ 500	6,231,348	0	0	-	0	0	-	0
	501 - 3,300	15,602,332	0	0	-	0	0	-	0
	3,301 - 10,000	14,390,656	54,800	54,500	-	55,200	54,600	-	55,100
	GW Total [3]	**36,224,336**	28,700	28,500	-	28,800	28,500	-	28,800
Surface Water	≤ 500	306,256	0	0	-	0	0	-	0
	501 - 3,300	2,674,107	0	0	-	0	0	-	0
	3,301 - 10,000	6,209,891	0	0	-	0	0	-	0
	SW Total [3]	**9,190,254**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**45,414,590**	23,500	23,400	-	23,700	23,400	-	23,600

[1] National estimates are based on extrapolated small system data.

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C1.h. DCPA Degradates - Population Served by SMALL Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 1 µg/L)

Source Water Type	Population Served	Total Pop. Served by Small Systems Nationally	National Estimate of Population Served by Small Systems Exceeding the Specified Threshold [1,2]							
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval			
Ground Water	≤ 500	6,231,348	171,400	167,000	-	175,800	167,800	-	175,100
	501 - 3,300	15,602,332	273,700	264,300	-	283,100	265,800	-	281,600
	3,301 - 10,000	14,390,656	105,100	90,600	-	119,700	92,900	-	117,400
	GW Total [3]	**36,224,336**	687,400	672,600	-	702,300	675,100	-	699,800
Surface Water	≤ 500	306,256	0	0	-	0	0	-	0
	501 - 3,300	2,674,107	5,800	5,000	-	6,700	5,100	-	6,600
	3,301 - 10,000	6,209,891	0	0	-	0	0	-	0
	SW Total [3]	**9,190,254**	4,200	3,600	-	4,800	3,700	-	4,700
Total Ground & Surface Water [3]		**45,414,590**	571,300	559,100	-	583,500	561,100	-	581,500

[1] National estimates are based on extrapolated small system data.

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.a. DCPA Degradates - Stage 2 Occurrence Results - Best Estimate and Confidence Intervals Based on the Number of LARGE Systems

Source Water Type	Population Served	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval
		Threshold = 70 µg/L			Threshold = 35 µg/L			Threshold = 1 µg/L		
Ground Water	10,001 - 50,000	**0.00011%**	0% - 0.00027%	0% - 0.00024%	**0.00061%**	0.00025% - 0.00098%	0.00031% - 0.00092%	**3.0%**	3.0% - 3.0%	3.0% - 3.0%
	> 50,000	**0%**	0% - 0%	0% - 0%	**0.0024%**	0.00063% - 0.0042%	0.00092% - 0.0039%	**2.5%**	2.4% - 2.5%	2.5% - 2.5%
	Total	**0.000096%**	0% - 0.00023%	0% - 0.00021%	**0.00086%**	0.00047% - 0.0013%	0.00053% - 0.0012%	**3.0%**	2.9% - 3.0%	2.9% - 3.0%
Surface Water	10,001 - 50,000	**0%**	0% - 0%	0% - 0%	**0.00011%**	0% - 0.00027%	0% - 0.00024%	**1.4%**	1.4% - 1.4%	1.4% - 1.4%
	> 50,000	**0%**	0% - 0%	0% - 0%	**0.00013%**	0% - 0.00039%	0% - 0.00035%	**1.0%**	1.0% - 1.0%	1.0% - 1.0%
	Total	**0%**	0% - 0%	0% - 0%	**0.00012%**	0% - 0.00025%	0.0000064% - 0.00023%	**1.3%**	1.3% - 1.3%	1.3% - 1.3%
All Small Systems - Combined Ground & Surface Water		**0.000043%**	0% - 0.00010%	0% - 0.000094%	**0.00046%**	0.00026% - 0.00065%	0.00029% - 0.00062%	**2.0%**	2.0% - 2.0%	2.0% - 2.0%

The Stage 2 occurrence estimates are based on the July 2005 UCMR 1 data.

Table C2.b. DCPA Degradates - LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals
(Threshold = 70 µg/L)

Source Water Type	Population Served	Total Number of Large Systems with DCPA Data	National Estimate of Large Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	10,001 - 50,000	1,194	0	0	-	0	0	-	0
	> 50,000	190	0	0	-	0	0	-	0
	GW Total [3]	**1,384**	0	0	-	0	0	-	0
Surface Water	10,001 - 50,000	1,180	0	0	-	0	0	-	0
	> 50,000	507	0	0	-	0	0	-	0
	SW Total [3]	**1,687**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**3,071**	0	0	-	0	0	-	0

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.c. DCPA Degradates - LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals
(Threshold = 35 µg/L)

Source Water Type	Population Served	Total Number of Large Systems with DCPA Data	National Estimate of Large Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	10,001 - 50,000	1,194	0	0	-	0	0	-	0
	> 50,000	190	0	0	-	0	0	-	0
	GW Total [3]	**1,384**	0	0	-	0	0	-	0
Surface Water	10,001 - 50,000	1,180	0	0	-	0	0	-	0
	> 50,000	507	0	0	-	0	0	-	0
	SW Total [3]	**1,687**	0	0	-	0	0	-	0
Total Ground & Surface Water [3]		**3,071**	0	0	-	0	0	-	0

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.d. DCPA Degradates - LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals
(Threshold = 1 µg/L)

Source Water Type	Population Served	Total Number of Large Systems with DCPA Data	National Estimate of Large Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	10,001 - 50,000	1,194	36	36	-	36	36	-	36
	> 50,000	190	5	5	-	5	5	-	5
	GW Total [3]	**1,384**	41	41	-	41	41	-	41
Surface Water	10,001 - 50,000	1,180	16	16	-	17	16	-	17
	> 50,000	507	5	5	-	5	5	-	5
	SW Total [3]	**1,687**	21	21	-	22	21	-	22
Total Ground & Surface Water [3]		**3,071**	62	62	-	63	62	-	63

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] System estimates are rounded to the nearest whole number.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.e. DCPA Degradates - Stage 2 Occurrence Results - Best Estimate and Confidence Intervals Based on the Population Served by LARGE Systems

Source Water Type	Population Served	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval	Mean Probability of Exceeding Threshold	95% Confidence Interval	90% Confidence Interval
		Threshold = 70 µg/L			Threshold = 35 µg/L			Threshold = 1 µg/L		
Ground Water	10,001 - 50,000	**0.000050%**	0% - 0.00012%	0% - 0.00011%	**0.00033%**	0.00012% - 0.00053%	0.00016% - 0.00050%	**3.1%**	3.1% - 3.1%	3.1% - 3.1%
	> 50,000	**0%**	0% - 0%	0% - 0%	**0.0017%**	0.00043% - 0.0029%	0.00063% - 0.0027%	**2.2%**	2.1% - 2.2%	2.1% - 2.2%
	Total	**0.000044%**	0% - 0.00011%	0% - 0.00010%	**0.00049%**	0.00026% - 0.00072%	0.00030% - 0.00069%	**3.0%**	3.0% - 3.0%	3.0% - 3.0%
Surface Water	10,001 - 50,000	**0%**	0% - 0%	0% - 0%	**0.000068%**	0% - 0.00016%	0% - 0.00015%	**1.1%**	1.1% - 1.1%	1.1% - 1.1%
	> 50,000	**0%**	0% - 0%	0% - 0%	**0.00013%**	0% - 0.00038%	0% - 0.00034%	**1.6%**	1.6% - 1.6%	1.6% - 1.6%
	Total	**0%**	0% - 0%	0% - 0%	**0.000085%**	0% - 0.00018%	0.0000029% - 0.00017%	**1.3%**	1.2% - 1.3%	1.2% - 1.3%
All Large Systems - Combined Ground & Surface Water		**0.000021%**	0% - 0.000050%	0% - 0.000045%	**0.00028%**	0.00016% - 0.00040%	0.00018% - 0.00038%	**2.1%**	2.1% - 2.1%	2.1% - 2.1%

The Stage 2 occurrence estimates are based on the July 2005 UCMR 1 data.

Table C2.f. DCPA Degradates - Population Served by LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 70 µg/L)

Source Water Type	Population Served	Total Pop. Served by Large Systems with DCPA Data	National Estimate of Population Served by Large Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	10,001 - 50,000	26,958,656	0	0	-	0	0	-	0
	> 50,000	26,476,158	0	0	-	0	0	-	0
	GW Total [3]	**53,434,814**	0	0	-	0	0	-	0
Surface Water	10,001 - 50,000	33,230,082	0	0	-	0	0	-	0
	> 50,000	135,389,905	0	0	-	0	0	-	0
	SW Total [3]	**168,619,987**	0	0	-	0	0	-	0
All Large Systems [3]		**222,054,801**	0	0	-	0	0	-	0

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.g. DCPA Degradates - Population Served by LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 35 µg/L)

Source Water Type	Population Served	Total Pop. Served by Large Systems with DCPA Data	National Estimate of Population Served by Large Systems Exceeding the Specified Threshold [1,2]						
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval		
Ground Water	10,001 - 50,000	26,958,656	0	0	-	0	0	-	0
	> 50,000	26,476,158	0	0	-	0	0	-	0
	GW Total [3]	**53,434,814**	0	0	-	0	0	-	0
Surface Water	10,001 - 50,000	33,230,082	0	0	-	0	0	-	0
	> 50,000	135,389,905	0	0	-	0	0	-	0
	SW Total [3]	**168,619,987**	0	0	-	0	0	-	0
All Large Systems [3]		**222,054,801**	0	0	-	0	0	-	0

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Table C2.h. DCPA Degradates - Population Served by LARGE Systems - National Best Estimate Including Estimate Range Based on Confidence Intervals (Threshold = 1 µg/L)

Source Water Type	Population Served	Total Pop. Served by Large Systems with DCPA Data	National Estimate of Population Served by Large Systems Exceeding the Specified Threshold [1,2]							
			using best estimate	using 95% Confidence Interval			using 90% Confidence Interval			
Ground Water	10,001 - 50,000	26,958,656	832,800	826,900	-	838,700	827,900	-	837,700	
	> 50,000	26,476,158	571,200	561,700	-	580,700	563,200	-	579,200	
	GW Total [3]	**53,434,814**	1,589,600	1,579,000	-	1,600,100	1,580,800	-	1,598,400	
Surface Water	10,001 - 50,000	33,230,082	370,700	365,900	-	375,400	366,700	-	374,700	
	> 50,000	135,389,905	2,183,900	2,163,400	-	2,204,400	2,166,800	-	2,201,000	
	SW Total [3]	**168,619,987**	2,117,100	2,098,200	-	2,136,000	2,101,300	-	2,132,900	
All Large Systems [3]		**222,054,801**	4,589,600	4,565,500	-	4,613,800	4,569,400	-	4,609,900	

[1] National estimates are based on actual UCMR large system data (not extrapolations).

[2] Population served estimates are rounded to the nearest hundred.

[3] Estimates are generated separately for each level of aggregation. Therefore, estimates for the individual size stratum will not add to estimated totals at the source water level of aggregation, and estimates for the source water strata ("GW Total" and "SW Total") will not add to the total estimated for all systems ("Total Ground & Surface Water").

Appendix D. Detailed Description of UCMR Large System Population-Served Adjustments

Appendix D. Assessing and Refining Population-Served Values for UCMR 1 Large Systems

Population-served values for UCMR 1 small systems were first extensively evaluated during the statistical design and initial implementation phases of the UCMR 1 program in 1999 and 2000. This was necessary to define the universe of small PWSs (i.e., those serving 10,000 persons or fewer) from which the statistical sample of representative UCMR 1 small PWSs was drawn. (Details are presented in USEPA, 2001b.[1]) Additional work was subsequently conducted to confirm the population-served values and other inventory information of small systems.

Defining the universe of small systems also served to define the universe of large systems (i.e., those serving greater than 10,000 persons) eligible for the UCMR 1 large system census. Verification and updating of large system population-served values and other systems inventory information began later, while UCMR monitoring was underway, in communications between EPA's Technical Service Center (TSC), EPA regions, States, and systems. EPA conducted a comprehensive check of inventory information (water source type, size category, population-served values, etc.) of the 3,100 large systems participating in UCMR 1.

Further efforts, presented here, were undertaken to establish the most current population-served values for the large systems and to address the issue of potential double-counting of populations exposed to contaminants found in "consecutive systems." Consecutive systems are systems that purchase finished drinking water from other systems; this might involve a simple seller-purchaser relationship, or one large wholesale distributor selling water to multiple systems that act as retail distributors to customers, or more complex arrangements like chains or reciprocal relationships among systems. In general, the system that provides water directly to a customer is considered the "retail" system, and any system the treats water eventually purchased by the retail system is considered a "wholesale" system. To the extent possible, population-served values of large UCMR 1 systems were adjusted to ensure that customers served by large consecutive systems were counted as belonging to the population served by the retail system, or a wholesale system, but not both.

Whenever possible, customers (populations-served) were assigned to the retail system on the principle that the UCMR 1 monitoring results from a PWS that is a retail seller are likely to better characterize the quality of water delivered to the consumer than will UCMR 1 monitoring results from an "upstream" wholesaler. An additional assumption is made that the UCMR 1 monitoring results from a PWS retail seller adequately reflect any blending of wholesale (purchased) water and self-sourced (non-purchased) water that is distributed to consumers.

Two major sources of data were used to determine the most accurate population-served values for the large systems. Both data sets originated from the Safe Drinking Water Information System/Federal Version (SDWIS/FED) database, but they represent different time periods and different levels of quality control and revision. The first source of data ("SDWIS00") represents

[1] The complete reference for USEPA (2001b) is included in the body of the report.

the 2nd quarter (June) version of SDWIS/FED from 2000. (This is the same data set that was used as the basis for categorizing systems as small or large at the beginning of the UCMR project.) Population-served values for a large portion of systems in this data set were updated during the implementation of the UCMR 1 program at the request of regional offices, the States, and/or individual systems. This effort to update population-served values in the SDWIS00 data set was very broad, but it was not comprehensive. The second source ("SDWIS05") represents the 4th quarter (December) version of SDWIS/FED from 2004; the data were extensively quality-checked in January 2005. This version of SDWIS/FED benefited from the extensive, systematic quality-control procedures that are typically applied to the data collected in the last quarter of each year.

For the purposes of UCMR 1, the population-served value of a participating large system should include the system's retail population (those customers served directly by the system) and its wholesale population (those served indirectly by the system, via intermediary systems who purchase the water), with the exception of those customers in the wholesale population who are already represented in the retail population of another UCMR-participating system. For example, if system A sold water to system B, system A's population-served value for purposes of UCMR 1 exposure analysis should only include the population of system B if system B itself did not participate in UCMR 1 monitoring.

Starting with the SDWIS05 data set, EPA used an additive process to construct the appropriate population-served values for UCMR 1 large systems. The population-served values in the SDWIS05 data set are generally understood to include retail customers only. Wholesale values were derived from a master list of 13,029 purchased-water relationships. Each relationship consisted of one seller and one purchaser. The master list also indicated, in each case, whether the relationship represented 100% of the purchaser's water supply. The following criteria were used to reduce the list of wholesale relationships to those whose inclusion would not result in double-counting of populations:

- Wholesale relationships were excluded if the purchasing system was considered as a small system for the purposes of UCMR 1 (i.e., if it had been determined to serve a population of 10,000 or less). The retail populations of small systems are accounted for in the UCMR 1 small system occurrence analysis. To assign these populations to wholesale systems would constitute double-counting. This step removed 10,670 relationships.

- Wholesale relationships were excluded if the purchaser was a large system that purchased less than 100% of its water, and therefore was among the 3,100 large systems that participated in UCMR 1 monitoring. The retail customers of these systems are already accounted for in the UCMR 1 large system data set. This step removed 638 relationships.

- Wholesale relationships were excluded if the purchaser was a large system that purchased 100% of its water, according to the wholesale relationship list, but nevertheless conducted UCMR 1 monitoring. Large systems that purchase 100% of their water were not required to participate in UCMR 1 monitoring. That several apparently did participate might be attributable to a misunderstanding of program requirements, or a change in

system operating characteristics (e.g., a system might have purchased less than 100% of its water when the UCMR 1 program began, and then purchased 100% of its water at the time the list of wholesale relationships was compiled), or some other cause. In any case, the retail customers of these systems are already accounted for in the UCMR 1 large system data set, so including them among the population served by a wholesale system would constitute double-counting. This step removed 16 relationships.

- In addition, wholesale relationships were excluded if the purchaser was listed as "closed" by SDWIS/FED. If a purchaser is no longer active as a water provider, its population should not be included in the totals either as a retail or a wholesale population. (Presumably, former customers of such a system are now served by another system, and are accounted for in that system's population-served value.) This step removed 81 relationships.

Of the initial list of 13,029 purchased-water relationships, 927 relationships remained. The result of the exclusions described above was that the remaining relationships involved only purchasers who are *active large systems that did not participate in UCMR 1 monitoring because they purchase 100% of their water from other systems*. There were 722 of these purchasing systems, and they purchased their water from 447 wholesale systems. Of these wholesale systems, 347 were large systems that participated in UCMR 1 monitoring. For these 347 systems, total population-served values were obtained by adding one or more wholesale populations to their their retail population. That left 2,763 of the 3,100 large UCMR 1 systems that required no purchasing-population adjustment; these could be fairly represented by their retail populations alone.

The final SDWIS05 population-served values, derived as described above, are based on the most current quality-assured version of SDWIS/FED and include purchased water while controlling for double-counting; thus, the SDWIS05 numbers likely represent the "best estimate" of total population-served.

To validate these population estimates, the (adjusted) SDWIS05 numbers were compared to the SDWIS00 numbers. Systems were divided into five different "bins" which categorized the difference between the two sets of population estimates (Exhibit D.1). Since 10,000 is the population-served threshold that separates small and large systems, it was used as a reference point for defining the bins. Note that a system could technically be defined as "large" yet have a population-served value of less than 10,000 when double-counting is adjusted. (I.e., a system could be defined as large for the UCMR 1 program based on its total retail plus wholesale population, but its retail population alone may be less than 10,000.) Large differences between SDWIS00 and SDWIS05 population estimates were often due to the fact that the adjusted SDWIS05 values eliminated double-counting. As presented in Exhibit D.2, "Bin 5," the largest, was stratified further based on the order of magnitude of the difference between the population-served values (i.e., log (SDWIS05 - SDWIS00)).

Exhibit D.1. Division of large systems into "bins" for comparison of SDWIS05 populations and SDWIS00 populations

Bin	Definition	Number of Systems in Bin
1	System's pop listed as < 10 in *SDWIS05* System's pop listed as ≥ 10,000 in *SDWIS00*	14
2	System's pop listed as between 10 and 10,000 in *SDWIS05* System's pop listed as ≥ 10,000 in *SDWIS00*	77
3	System's pop listed as < 10,000 in both *SDWIS00* and *SDWIS05*	23
4	System's pop listed as ≥ 10,000 in *SDWIS05* System's pop listed as < 10,000 in *SDWIS00*	23
5	System's pop listed as ≥ 10,000 in both *SDWIS00* and *SDWIS05*	2,973

Exhibit D.2. Division of "Bin 5" systems by order-of-magnitude difference between the SDWIS05 population and the SDWIS00 population

Order-of-Magnitude Difference	Difference between SDWIS05 & SDWIS00 Populations	Number of Systems
7	5,000,000 to 50,000,000	1
6	500,000 to 5,000,000	21
5	50,000 to 500,000	195
4	5,000 to 50,000	859
3	500 to 5,000	915
2	50 to 500	169
1	5 to 50	15
0	1 to 5	3
None		795

The SDWIS05 values were used as the "default" or "best estimate" population-served values except in cases where it was clear that the SDWIS00 populations were a better or more conservative population estimate. Part of this evaluation involved looking at the "absolute purchasing population" (APP)--the total population of all systems that have purchased from a selling system. The APP is the starting point for calculating a wholesale population-served value by a subtractive method, e.g., by taking into account double-counting, systems' closings, etc. The

following four decision-criteria were ultimately used to pick the best population-served estimate for each of the 3,100 large systems:

1. If the SDWIS05 population is 10,000 or less and has an APP of zero (i.e., the system does not sell to others), and the SDWIS00 population is greater than 10,000, use the SDWIS00 population.

2. If the SDWIS05 population is 10,000 or less and has an APP of zero, and the SDWIS00 population is also 10,000 or less, use the SDWIS05 population.

3. In all other cases, use the SDWIS05 population.

4. If the chosen population is zero or one, increase it to 50 to represent a nominal sum.

After following these four steps for all 3,100 large systems, a final analysis was conducted to determine whether the decision-criteria "fairly" resolved all population discrepancies. Particular attention was paid to those systems that fell into Bins 1 through 4 and those from Bin 5 with differences of between five and seven orders of magnitude. A total of 26 systems required further investigation (see Exhibit D.3).

To provide further information in these cases, the population-served estimates from the 2001 Needs Survey[2] and the Disinfection Byproducts Information Collection Rule (ICR)[3] were also consulted when available. For each system, the population chosen by following the previously-outlined decision-criteria was compared to the other population estimates available. In many cases, additional information was gathered via the Internet, from EPA regional offices, and from State and Local resources. After this thorough analysis and comparison, EPA decided that the decision criteria produced the best population-served value for all but five of the above systems (see Exhibit D.4).

[2] The "Needs Survey" is a national survey of drinking water infrastructure needs that is a joint effort of the nation's drinking water utilities, State drinking water regulatory agencies, representatives of American Indians and Alaska Natives, the Indian Health Service, and the U.S. EPA. For more details, see *Drinking Water Infrastructure Needs Survey: Second Report to Congress* (EPA Report 816-R-01-004, 2001).

[3] The Disinfection Byproducts (DBPs) ICR required only large public water systems to collect data. Surface water systems serving more than 100,000 people and ground water systems serving more than 50,000 people had to monitor for DBPs (61 FR 24354).

Exhibit D.3. Twenty-six systems requiring further investigation before selecting a population-served value

PWSID	PWS Name	SDWIS00	SDWIS05	Absolute Purchasing Population	Needs Survey	ICR
CA1510040	Kern County Water Agency (KCWA)	100,000	(50)	0	103,481	N/A
CA1910087	***Metropolitan Water District of S. CA***	***16,000,000***	***767,682***	0	18,000,000	5,445,793
CA1910128	Covina Irrigation Company	85,000	(50)	0	216,000	N/A
CA3410030	City of Folsom - Ashland	25,674	2,152	2,152	N/A	N/A
CA3610006	Water Facilities Authority - JPA	400,000	(50)	0	374,715	356,667
CA3610019	San Bernardino Valley Water District	90,460	(50)	0	625,000	N/A
CA4810015	Travis Air Force Base - Vallejo	32,000	3	3	N/A	N/A
CA4910020	Sonoma County Water Agency	487,254	500	500	500,000	487,254
FL2550908	Ponte Vedra Beach Water Department	4,700	4,700	4,700	N/A	N/A
FL4431490	***Martin County Utilities - South***	***13,900***	***72,641***	72,641	N/A	N/A
FL4431891	***Martin County Utilities - North***	***16,100***	***72,641***	72,641	N/A	N/A
FL4434383	***Martin County Utilities - Martin Downs***	***10,350***	***72,641***	72,641	N/A	N/A
FL6277059	Hernando County Utilities - West	26,192	127,977	127,977	42,751	N/A
GU0000016	Earth Tech, Inc.	12,500	0	0	N/A	N/A
IA7727001	Des Moines Waterworks - Maffitt	193,189	25	25	N/A	N/A
LA1079016	City of Pineville	228,000	22,716	22,716	24,000	N/A
MA6000000	***MA Water Resources Authority***	***2,000,000***	***3,673,318***	2,383,302	2,200,000	1,642,866
MI0006310	Saint Joseph	32,431	8,789	8,789	32,000	N/A
OH3902611	Village of New London - Plant #2	52,000	6,000	6,000	N/A	N/A
OH7608112	Canton Public Water System	1,400,000	140,000	140,000	140,000	N/A
OH8301412	Village of Springboro - Chautaqua	123,000	13,200	13,200	16,800	N/A
PR0002000	Super Acueducto	750,000	50,001	50,001	750,000	N/A
PR0003313	Anasco	25,524	4,188	4,188	4,108	N/A
TX0670019	Eastland County Water Supply District #1	25	25	25	N/A	N/A
TX1010429	CNP Utility District	101,956	11,934	11,934	N/A	N/A
WV3303111	Morgantown Utility Board	464,947	47,147	47,147	65,000	N/A

N/A = Data not available
Numbers selected for systems in accordance with the decision criteria are highlighted in grey.
The systems for which the decision criteria were not followed are indicated in bold and italics.

There were five exceptions to the decision criteria (see Exhibit D.4); these represent the most extreme cases where there was compelling evidence that the estimate chosen by the decision criteria (either the SDWIS00 or SDWIS05) was clearly the inferior of the two. In the case of the Metropolitan Water District of Southern California, neither the SDWIS00 nor

SDWIS05 population estimate represented the true population-served. Additional research was necessary to establish an accurate estimate.

Exhibit D.4. Five systems for which the decision criteria yielded inadequate results

PWSID	PWS Name	Population Chosen	Rationale for Exception
CA1910087	Metropolitan Water District of Southern California	3,399,581	Total wholesale population is ~ 17.2 million. However, this includes extensive double-counting of purchasing systems that also submitted unique UCMR results. Eliminating the double-counting yields the resulting population estimate of 3,399,581.
FL4431490	Martin County Utilities - South	13,900	Since all three systems had the same SDWIS05 population, it was clear that the total population-served value of the combined utility had been erroneously reported for all three individual systems. SDWIS00 populations were confirmed by Florida Department of Environmental Protection.
FL4431891	Martin County Utilities - North	16,100	
FL4434383	Martin County Utilities - Martin Downs	10,350	
MA6000000	MA Water Resources Authority	2,000,000	EPA confirmed that this system reported to SDWIS its retail plus wholesale population as its retail population. Thus, the SDWIS05 population double-counted the wholesale population.

The resulting large system population values, combined with the previously-established small system population values, constitute the full set of population values for the UCMR 1 contaminant exposure analysis. As of March 2006, a total of 3,887 systems (797 small and 3,090 large) have submitted results for UCMR 1. The total population served by all these systems is 226,892,179 (2,760,570 persons served by small systems and 224,131,609 persons served by large systems).

Exhibit D.5. Adjusted UCMR 1 population-served estimates

System Size	***Number of Systems in UCMR 1***	***Adjusted UCMR 1 Population Served***
Small	797	2,760,570
Large	3,090	224,131,609
Total	**3,887**	**226,892,179**

Although populations served by PWSs vary over time, the population-served size categories determined as part of the initial implementation of the UCMR 1 are, for purposes of

UCMR 1 exposure analysis, fixed. Large PWSs are subdivided into two finer size categories: "large" (systems serving between 10,001 and 50,000 persons) and "very large" (systems serving more than 50,000 persons). It is important to note that the new (adjusted) population-served estimates for each system, as described in this appendix, may not always agree with the system's previously-defined size category. The new (adjusted) population-served estimates do not define the size categories, nor do the size categories define limits on the population-served estimates. The purpose of the size categories is to aid in analysis and interpretation of results at the system level, while the purpose of the population-served estimates is to provide as realistic an estimate as possible of the extent of human exposure to the monitored contaminants.

The population adjustments discussed in this appendix served to reduce double-counting of populations exposed to contaminants in consecutive systems where both the seller and buyer of water conducted UCMR 1 monitoring. The adjustments should result in a reduction of over-estimates of populations potentially exposed to contaminants in drinking water monitored under the UCMR 1. The adjustments were made prior to and independent of all the contaminant-specific occurrence analyses, so the actual impact of the adjustments on exposure estimates for any specific contaminant is not known. In principle, the adjustments would most affect exposure estimates for contaminants occurring more commonly in large consecutive systems.

Appendix E. Development of Health Reference Levels (HRLs)

Appendix E. Development of Health Reference Levels

Section 1412(b)(1)(A)(i) of SDWA requires EPA to determine whether each candidate contaminant may have an adverse effect on public health. This appendix describes the overall process the Agency used to evaluate health effects information, the approach used to estimate a contaminant health reference level or HRL (a benchmark against which to conduct the initial evaluation of the occurrence data), and the approach used to identify and evaluate information on hazard and dose-response for the contaminants under consideration.

There are two different approaches to the derivation of an HRL. One approach is used for chemicals that cause cancer and exhibit a linear response to dose and the other applies to non-carcinogens and carcinogens evaluated using a non-linear approach.

Use of Carcinogenicity Data for the Derivation of a Health Reference Level

Five of the contaminants discussed in this report had data available to classify them as likely or probable human carcinogens. These five contaminants (DDE, 1,3-dichloropropene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, and 1,1,2,2-tetrachloroethane) are also the only contaminants for which low dose linear extrapolations were performed. For these contaminants, EPA evaluated data on the mode of action of the chemical to determine the method of low dose extrapolation. When this analysis indicates that a linear low dose extrapolation is appropriate or when data on the mode of action are lacking, EPA uses a low dose linear extrapolation to calculate risk-specific doses. The risk-specific doses are the estimated oral exposures associated with lifetime excess risk levels that range from one cancer in ten thousand (10^{-4}) to one cancer in a million (10^{-6}). The risk-specific doses (expressed as mg/kg of body weight per day) are combined with adult body weight and drinking water consumption data to estimate drinking water concentrations corresponding to this risk range. EPA generally used the one-in-a-million (10^{-6}) cancer risk in the initial screening of the occurrence data for carcinogens evaluated using linear low dose extrapolation.

Use of Non-carcinogenic Health Effects Data for Derivation of a Health Reference Level

The remaining six contaminants (boron, DCPA mono- and di-acid degradates,[1] EPTC, fonofos and terbacil) have not been identified as known, likely or probable carcinogens. For these contaminants, EPA calculated a reference dose (RfD). An RfD is an estimate of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from either a "no-observed-adverse-effect level" (NOAEL), a "lowest-observed-adverse-effect level" (LOAEL), or a benchmark dose, with uncertainty factors applied to reflect limitations of the data used.

EPA used uncertainty factors (UFs) to address uncertainty resulting from incompleteness of the toxicological database. The individual UFs (usually applied as integers of 1, 3, or 10) were

[1] The HRL for the two DCPA degradates is based on the HRL value derived for the DCPA parent following the guidance provided by EPA's Office of Pesticide Programs.

multiplied together and used to derive the RfD from experimental data. Individual UFs are intended to account for:

(1) the variation in sensitivity among the members of the human population (i.e., intraspecies variability);
(2) the uncertainty in extrapolating animal data to humans (i.e., interspecies variability);
(3) the uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure to lifetime exposure (i.e., extrapolating from subchronic to chronic exposure);
(4) the uncertainty in extrapolating from a LOAEL rather than from a NOAEL; and/or
(5) the uncertainty associated with an incomplete database.

EPA derived the HRLs using the RfD approach as follows:

$$HRL = [(RfD \times BW)/DWI] \times RSC$$

Where:
RfD = Reference Dose
BW = Body Weight for an adult, assumed to be 70 kilograms (kg)
DWI = Drinking Water Intake, assumed to be 2 L/day (90^{th} percentile)
RSC = Relative Source Contribution, or the level of exposure believed to result from drinking water when compared to other sources (e.g., food, ambient air). A 20 percent RSC is being used to estimate the HRL and screen the occurrence data because it is the lowest and most conservative RSC used in the derivation of a maximum contaminant level goal (MCLG) for drinking water.

For each of the six aforementioned non-carcinogenic compounds for which the Agency has made regulatory determination in this action, EPA used the RfD in conjunction with a 20 percent RSC to derive a conservative HRL estimate and perform an initial screening of the drinking water occurrence data. Since the initial screening of the occurrence data at this conservative HRL value resulted in negligible occurrence findings for each of these six compounds, EPA recognized that it was not necessary to further evaluate the RSC in making the regulatory determination.

Appendix F. Detailed Description of the Sensitivity Analysis Comparing Adjusted/Unadjusted Findings

Appendix F. Detailed Description of the Sensitivity Analysis Comparing Adjusted/Unadjusted Findings

Calculation of Probability-Weighted Estimation of Population Served

All probabilities of unit selection within each state were divided by 56 to obtain the probability of unit selection from any of the combined strata (56 states x 2 system types x 2 source types x 3 system sizes). Probabilities from Appendix B of "Statistical Design and Sample Selection for the Unregulated Contaminant Monitoring Regulation" (USEPA, 2001b), calculated using the requirement of at least 2 systems per State, were used in this analysis; thus, it was not necessary to revisit the constraint of at least two systems per State. Within each stratum, an individual unit's probability of selection is proportional to its strata population contribution. Thus, each stratum probability was multiplied by the ratio of the unit population and total stratum population. Obtained weights were adjusted such that they added to 1 for all 800 selected units by dividing each weight by the total of all 800 weights. Finally, the weighted mean was estimated as:

$$\mu = \sum_{i=1 \text{ to } 800} W_i \text{ x } Pop_i \text{ x } y_i$$

where W is the calculated weight for a unit i, Pop is population served by a unit i, and y is the indicator equal to 1 if the contaminant occurs at any time in system i, or 0 otherwise.

Sensitivity Analysis of Weighting versus Non-Weighting

The sensitivity analysis compared weighted and non-weighted mean population-served by systems with detections based on various detection rates.[1] At each detection rate, a number of systems was randomly selected without replacement (8 systems at the1% detection rate scenario, 16 at the 2% detection rate scenario, 24 at 3%,...,80 at 10%, and 400 at 50% detection rate). Weighted and non-weighted mean populations-served were calculated for each system. In systems with no detections, the population-served value was set to zero. The calculated weighted and non-weighted means were compared using two-sample t-tests assuming both equal and unequal variances.[2] At every single detection level, there was no significant statistical difference between weighted and unweighted. Additionally, weighted and non-weighted mean populations-served by systems were compared at a 100 percent detection rate, assuming that all 800 small systems had detections (so all populations-served were served by systems with contaminant

[1] This analysis was conducted independent of any particular contaminant. The aim was to determine whether or not weighting made any difference (related to the mean population exposed) if there is x % of detections in the data. The analysis was fairly generic and is applicable to any contaminant.

[2] A two-sample t-test is conventionally used to test if estimates, usually means, from one sample are statistically different from mean of the other sample. The test assumes that the two samples being tested are independent of each other. Because there is no conventional way to test means equality of the same sample with and without weights (such as in the current consideration), this analysis assumes independence of the sample with and without weights. If we can take a sample of 3 data points (1 with a weight of x, 2 with a weight of y, and 3 with a weight of z) then the unweighted sample is 1,2,3, and the weighted sample is replicated as x number of 1s, y number of 2s, and z number of 3s. The unweighted mean, in this case, is 6/3=2, and the weighted mean is (x+2y+3z)/(x+y+z).

detections). Again, it was determined that the weights do not significantly change population means overall. Exhibit F.1 illustrates the results.

Exhibit F.1: Comparison of Weighted and Unweighted means for all systems (ignoring strata information)

Method	Variances	Degrees of Freedom	t-Value	Pr > |t|
Detection Rate = 1%				
Pooled	Equal	1598	0.34	0.7359
Satterthwaite	Unequal	1581	0.34	0.7359
Cochran	Unequal	799	0.34	0.7359
Detection Rate = 2%				
Pooled	Equal	1598	-0.67	0.4999
Satterthwaite	Unequal	1075	-0.67	0.4999
Cochran	Unequal	799	-0.67	0.5000
Detection Rate = 3%				
Pooled	Equal	1598	-0.46	0.6447
Satterthwaite	Unequal	1167	-0.46	0.6447
Cochran	Unequal	799	-0.46	0.6447
Detection Rate = 4%				
Pooled	Equal	1598	-0.21	0.8348
Satterthwaite	Unequal	1232	-0.21	0.8349
Cochran	Unequal	799	-0.21	0.8349
Detection Rate = 5%				
Pooled	Equal	1598	-0.28	0.7767
Satterthwaite	Unequal	1270	-0.28	0.7768
Cochran	Unequal	799	-0.28	0.7768
Detection Rate = 6%				
Pooled	Equal	1598	-0.25	0.7994
Satterthwaite	Unequal	1303	-0.25	0.7994
Cochran	Unequal	799	-0.25	0.7994
Detection Rate = 7%				
Pooled	Equal	1598	-0.19	0.8475
Satterthwaite	Unequal	1326	-0.19	0.8475
Cochran	Unequal	799	-0.19	0.8476
Detection Rate = 8%				
Pooled	Equal	1598	-0.04	0.9717
Satterthwaite	Unequal	1348	-0.04	0.9717
Cochran	Unequal	799	-0.04	0.9717

Method	Variances	Degrees of Freedom	t-Value	Pr > |t|
Detection Rate = 9%				
Pooled	Equal	1598	-0.02	0.9821
Satterthwaite	Unequal	1358	-0.02	0.9821
Cochran	Unequal	799	-0.02	0.9821
Detection Rate = 10%				
Pooled	Equal	1598	-0.04	0.9660
Satterthwaite	Unequal	1344	-0.04	0.9660
Cochran	Unequal	799	-0.04	0.9660
Detection Rate = 50%				
Pooled	Equal	1598	-1.49	0.1356
Satterthwaite	Unequal	1113	-1.49	0.1357
Cochran	Unequal	799	-1.49	0.1358
Detection Rate = 100%				
Pooled	Equal	1598	-1.34	0.1815
Satterthwaite	Unequal	811	-1.34	0.1817
Cochran	Unequal	799	-1.34	0.1817

Since no significant statistical difference was found between weighted and unweighted means, an analysis was conducted to look at how weights affect means in different strata, i.e. the two system types (CWS and NTNCWS) and three system sizes (25-500, 501-3300 and 3301-10000). For CWS systems (regardless of system size), weights do not appear to affect the mean (see Exhibit F.2).

Exhibit F.2: Comparison of Weighted and Unweighted Means for CWS systems by system size

Method	Variances	Degrees of Freedom	t-Value	Pr > |t|
System Size = 25 - 500				
Pooled	Equal	244	0.85	0.3987
Satterthwaite	Unequal	130	0.85	0.3994
Cochran	Unequal	122	0.85	0.3995
System Size = 501 - 3,300				
Pooled	Equal	504	1.35	0.1766
Satterthwaite	Unequal	261	1.35	0.1772
Cochran	Unequal	252	1.35	0.1772
System Size = 3,301 - 10,000				
Pooled	Equal	666	-1.37	0.1697
Satterthwaite	Unequal	334	-1.37	0.1702
Cochran	Unequal	333	-1.37	0.1702

For NTNCWS systems, there is significant statistical difference between weighted and unweighted means (see Exhibit F.3). [3] Note that due to the small number of observations (only 9), no analysis was conducted for NTNCWS system size of 3,301-10,000. For the other 2 systems sizes (25-500 and 501-3300), the equality of means was tested at 5%, 10% and 15% detection rates due to smaller sample size. This analysis indicated that weights do not play significant role at small detection rates (5% and 10%) yet weighted means are significantly different from non-weighted means for higher detection rates (15%).

Exhibit F.3: Comparison of Weighted and Unweighted Means for NTNCWS systems by system size

Method	Variances	Degrees of Freedom	t-Value	Pr > |t|
System Size = 25 - 500; Detection Rate = 5%				
Pooled	Equal	84	1.15	0.2526
Satterthwaite	Unequal	42	1.15	0.2559
Cochran	Unequal	42	1.15	0.2559
System Size = 501 - 3,300; Detection Rate = 5%				
Pooled	Equal	74	1.37	0.1764
Satterthwaite	Unequal	37	1.37	0.1805
Cochran	Unequal	37	1.37	0.1805
System Size = 25 - 500; Detection Rate = 10%				
Pooled	Equal	84	1.67	0.0992
Satterthwaite	Unequal	42	1.67	0.1029
Cochran	Unequal	42	1.67	0.1029
System Size = 501 - 3,300; Detection Rate = 10%				
Pooled	Equal	74	1.67	0.1001
Satterthwaite	Unequal	37.2	1.67	0.1042
Cochran	Unequal	37	1.67	0.1043

[3] In Exhibit B.3., the fractional degrees of freedom are possible because of the use of the Welch-Satterthwaite Approximation

$$v = \frac{\left(\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}\right)^2}{\frac{s_1^4}{N_1^2(N_1-1)} + \frac{s_2^4}{N_2^2(N_2-1)}}$$

where s1 and s2 are standard deviations of two samples and N1 and N2 are sample size. The formula is used in t-test when it can not be assumed that standard deviations from two processes/samples are equivalent.

Method	Variances	Degrees of Freedom	t-Value	Pr > |t|
System Size = 25 - 500; Detection Rate = 15%				
Pooled	Equal	84	2.22	0.0289
Satterthwaite	Unequal	42	2.22	0.0317
Cochran	Unequal	42	2.22	0.0317
System Size = 501 - 3,300; Detection Rate = 15%				
Pooled	Equal	74	2.17	0.0330
Satterthwaite	Unequal	37.2	2.17	0.0362
Cochran	Unequal	37	2.17	0.0363
System Size = 25 - 500; Detection Rate = 100%				
Pooled	Equal	84	2.67	0.0090
Satterthwaite	Unequal	55.2	2.67	0.0099
Cochran	Unequal	42	2.67	0.0107
System Size = 501 - 3,300; Detection Rate = 100%				
Pooled	Equal	74	5.17	<0.0001
Satterthwaite	Unequal	71.4	5.17	<0.0001
Cochran	Unequal	37	5.17	<0.0001
System Size = 3,301 - 10,000; Detection Rate = 100%				
Pooled	Equal	16	-2.69	0.0162
Satterthwaite	Unequal	8.09	-2.69	0.0274
Cochran	Unequal	8	-2.69	0.0277

Appendix G. Stage 1 Occurrence Measures for All CCL 2 Regulatory Determination Contaminants Monitored Under UCMR 1

Table G1.a. DCPA Degradates - Occurrence Based on Samples, Systems, & Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level					Population-Served Level				
			Detections			Detections					Detections			
		Total # of Samples			Total # of Systems	Systems with One or More		Systems with Two or More		Total Pop. Served by Systems	Pop. Served by Systems with One or More		Pop. Served by Systems with Two or More	
			#	%		#	%	#	%		#	%	#	%
Small Systems (Statistical Sample)														
GW	25 - 500	257	2	0.78%	111	1	0.90%	1	0.90%	27,599	500	1.81%	500	1.81%
	501 - 3,300	876	6	0.68%	245	3	1.22%	2	0.82%	441,499	4,692	1.06%	2,997	0.68%
	3,301 - 10,000	1,212	29	2.39%	234	12	5.13%	9	3.85%	1,470,717	81,241	5.52%	59,897	4.07%
	Total	2,345	37	1.58%	590	16	2.71%	12	2.03%	1,939,815	86,433	4.46%	63,394	3.27%
SW	25 - 500	223			52					16,662				
	501 - 3,300	181	1	0.55%	45	1	2.22%			91,723	1,500	1.64%		
	3,301 - 10,000	523			110					712,370				
	Total	927	1	0.11%	207	1	0.48%	0	0.00%	820,755	1,500	0.18%	0	0.00%
All Small Systems		3,272	38	1.16%	797	17	2.13%	12	1.51%	2,760,570	87,933	3.19%	63,394	2.30%
Large Systems (Census)														
GW	10,001 - 50,000	10,540	273	2.59%	1,199	87	7.26%	57	4.75%	27,061,195	2,095,370	7.74%	1,525,466	5.64%
	> 50,000	5,566	214	3.84%	190	22	11.58%	17	8.95%	26,476,158	3,987,609	15.06%	3,212,861	12.13%
	Total	16,106	487	3.02%	1,389	109	7.85%	74	5.33%	53,537,353	6,082,979	11.36%	4,738,327	8.85%
SW	10,001 - 50,000	7,393	164	2.22%	1,183	34	2.87%	28	2.37%	33,338,950	1,136,909	3.41%	958,238	2.87%
	> 50,000	7,139	87	1.22%	507	17	3.35%	13	2.56%	135,389,905	4,049,548	2.99%	3,310,638	2.45%
	Total	14,532	251	1.73%	1,690	51	3.02%	41	2.43%	168,728,855	5,186,457	3.07%	4,268,876	2.53%
All Large Systems		30,638	738	2.41%	3,079	160	5.20%	115	3.73%	222,266,208	11,269,436	5.07%	9,007,203	4.05%
All (Small & Large) Systems														
Total Water Systems[1]		33,910	776	2.29%	3,876	177	4.57%	127	3.28%	225,026,778	11,357,369	5.05%	9,070,597	4.03%

[1] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G1.b. DCPA Degradates - Statistics for All Detections (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Total # of Detections	Statistics for All Recorded Values Above the Detection Limit (in µg/L)				
			Minimum	Mean	Median	99th Percentile	Maximum
Small Systems (Statistical Sample)							
GW	25 - 500 [1]	2	180.00	185.00	185.00	190.00	190.00
	501 - 3,300	6	1.20	1.82	1.60	2.80	2.80
	3,301 - 10,000	29	1.20	2.49	1.80	7.30	7.30
	Total	37	1.20	12.25	1.80	190.00	190.00
SW	25 - 500	0					
	501 - 3,300	1	1.90	1.90	1.90	1.90	1.90
	3,301 - 10,000	0					
	Total	1	1.90	1.90	1.90	1.90	1.90
All Small Systems		38	1.20	11.97	1.80	190.00	190.00
Large Systems (Census)							
GW	10,001 - 50,000	273	1.00	3.30	2.00	18.00	31.00
	> 50,000	214	1.00	2.41	1.85	9.03	11.00
	Total	487	1.00	2.91	2.00	15.00	31.00
SW	10,001 - 50,000	164	1.00	2.99	2.00	19.00	24.00
	> 50,000	87	1.00	3.88	2.30	39.00	39.00
	Total	251	1.00	3.30	2.00	24.00	39.00
All Large Systems		738	1.00	3.04	2.00	16.00	39.00
All (Small & Large) Systems							
Total Water Systems[2]		776	1.00	3.48	2.00	19.00	190.00

[1] Note that there were only two detections of DCPA in this source water type / size category. Thus, the statistics generated for this category are based on only two detections.

[2] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, combined large and small summary statistics do not accurately represent national occurrence.

Table G1.c. DCPA Degradates - System Level Occurrence by State & Size Category (UCMR 1 March 2006 data)

State [1,2]	Total # Samples	Total # PWSs			# PWSs with Detections			% PWSs with Detections			PWSs w/ Detections > 1/2 HRL[3]		PWSs w/ Detections > HRL[3]	
		Total	Small	Large	Total	Small	Large	Total	Small	Large	#	%	#	%
Alaska	53	9	4	5										
Alabama	810	98	15	83	1	1	0	1.02%	6.67%	0.00%				
Arkansas	226	47	13	34										
Arizona	1,291	59	12	47	9	1	8	15.25%	8.33%	17.02%				
California	8,570	406	48	358	20	1	19	4.93%	2.08%	5.31%				
Colorado	397	56	10	46										
Connecticut	370	41	6	35	1	0	1	2.44%	0.00%	2.86%				
D.C.	9	1	0	1										
Delaware	102	8	2	6	2	0	2	25.00%	0.00%	33.33%				
Florida	1,164	238	31	207	1	0	1	0.42%	0.00%	0.48%				
Georgia	577	101	22	79										
Guam	268	5	1	4	1	0	1	20.00%	0.00%	25.00%				
Hawaii	395	17	3	14										
Iowa	213	47	16	31	1	0	1	2.13%	0.00%	3.23%				
Idaho	249	21	8	13	1	1	0	4.76%	12.50%	0.00%				
Illinois	744	133	28	105	7	2	5	5.26%	7.14%	4.76%				
Indiana	393	85	20	65	5	0	5	5.88%	0.00%	7.69%				
Kansas	245	41	12	29										
Kentucky	345	77	9	68										
Louisiana	417	82	27	55										
Massachusetts	1,132	132	12	120	17	2	15	12.88%	16.67%	12.50%				
Maryland	173	36	8	28	1	0	1	2.78%	0.00%	3.57%				
Maine	91	19	6	13										
Michigan	365	71	24	47	9	1	8	12.68%	4.17%	17.02%	1	1.41%	1	1.41%
Minnesota	432	85	16	69	9	0	9	10.59%	0.00%	13.04%				
Missouri	450	68	20	48										
N. Mariana Is.	140	3	2	1										
Mississippi	519	72	30	42										
Montana	124	13	6	7										
North Carolina	1,043	115	22	93	2	0	2	1.74%	0.00%	2.15%				
North Dakota	41	13	4	9										
Nebraska	228	20	8	12	8	3	5	40.00%	37.50%	41.67%				
New Hampshire	134	21	6	15	1	0	1	4.76%	0.00%	6.67%				
New Jersey	1,055	128	16	112	32	2	30	25.00%	12.50%	26.79%	1	0.78%		
New Mexico	358	32	8	24										
Nevada	72	11	4	7										
New York	2,439	159	29	130	21	0	21	13.21%	0.00%	16.15%				
Ohio	550	153	28	125										
Oklahoma	318	52	15	37										
Oregon	354	55	11	44										
Pennsylvania	1,258	165	37	128	13	1	12	7.88%	2.70%	9.38%				
Puerto Rico	718	85	9	76										
Rhode Island	103	13	2	11	5	0	5	38.46%	0.00%	45.45%				
South Carolina	289	59	11	48										
South Dakota	102	17	4	13										
Tennessee	546	105	14	91	1	0	1	0.95%	0.00%	1.10%				
Texas	1,728	266	71	195										
Utah	469	52	7	45	5	0	5	9.62%	0.00%	11.11%				
Virginia	295	58	16	42										
Virgin Islands	28	4	2	2										
Vermont	40	10	4	6										
Washington	681	82	17	65										
Wisconsin	548	76	21	55	4	2	2	5.26%	9.52%	3.64%				
West Virginia	151	35	10	25										
Wyoming	68	11	3	8										
Tribe - 05	2	1	1	0										
Tribe - 06	2	1	1	0										
Tribe - 07	4	1	1	0										
Tribe - 08	6	2	2	0										
Tribe - 09	16	3	2	1										
Total	33,910	3,876	797	3,079	177	17	160	4.57%	2.13%	5.20%	2	0.05%	1	0.03%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

[3] The HRL used for this analysis was 70 µg/L.

Table G1.d. DCPA Degradates - System Level Occurrence by State & Source Water Type (UCMR 1 March 2006 data)

State [1,2]	Total # PWSs			# PWSs with Detections			% PWSs with Detections			# PWSs with Detections > 1/2 HRL[3]		% PWSs with Detections > 1/2 HRL[3]		# PWSs with Detections > HRL[3]		% PWSs with Detections > HRL[3]	
	Total	GW	SW	Total	GW	SW	Total	GW	SW	GW	SW	GW	SW	GW	SW	GW	SW
Alaska	9	4	5														
Alabama	98	42	56	1	1	0	1.02%	2.38%	0.00%								
Arkansas	47	23	24														
Arizona	59	45	14	9	9	0	15.25%	20.00%	0.00%								
California	406	178	228	20	14	6	4.93%	7.87%	2.63%								
Colorado	56	15	41														
Connecticut	41	11	30	1	1	0	2.44%	9.09%	0.00%								
D.C.	1	0	1														
Delaware	8	4	4	2	0	2	25.00%	0.00%	50.00%								
Florida	238	220	18	1	1	0	0.42%	0.45%	0.00%								
Georgia	101	38	63														
Guam	5	1	4	1	0	1	20.00%	0.00%	25.00%								
Hawaii	17	15	2														
Iowa	47	27	20	1	1	0	2.13%	3.70%	0.00%								
Idaho	21	17	4	1	1	0	4.76%	5.88%	0.00%								
Illinois	133	84	49	7	6	1	5.26%	7.14%	2.04%								
Indiana	85	64	21	5	3	2	5.88%	4.69%	9.52%								
Kansas	41	23	18														
Kentucky	77	8	69														
Louisiana	82	58	24														
Massachusetts	132	68	64	17	10	7	12.88%	14.71%	10.94%								
Maryland	36	18	18	1	1	0	2.78%	5.56%	0.00%								
Maine	19	6	13														
Michigan	71	38	33	9	8	1	12.68%	21.05%	3.03%	1	0	2.63%	0.00%	1	0	2.63%	0.00%
Minnesota	85	75	10	9	9	0	10.59%	12.00%	0.00%								
Missouri	68	43	25														
N. Mariana Is.	3	2	1														
Mississippi	72	70	2														
Montana	13	6	7														
North Carolina	115	38	77	2	2	0	1.74%	5.26%	0.00%								
North Dakota	13	6	7														
Nebraska	20	18	2	8	8	0	40.00%	44.44%	0.00%								
New Hampshire	21	8	13	1	0	1	4.76%	0.00%	7.69%								
New Jersey	128	88	40	32	19	13	25.00%	21.59%	32.50%	0	1	0.00%	2.50%				
New Mexico	32	25	7														
Nevada	11	4	7														
New York	159	71	88	21	19	2	13.21%	26.76%	2.27%								
Ohio	153	85	68														
Oklahoma	52	15	37														
Oregon	55	20	35														
Pennsylvania	165	43	122	13	4	9	7.88%	9.30%	7.38%								
Puerto Rico	85	24	61														
Rhode Island	13	6	7	5	3	2	38.46%	50.00%	28.57%								
South Carolina	59	15	44														
South Dakota	17	8	9														
Tennessee	105	19	86	1	0	1	0.95%	0.00%	1.16%								
Texas	266	127	139														
Utah	52	17	35	5	1	4	9.62%	5.88%	11.43%								
Virginia	58	14	44														
Virgin Islands	4	0	4														
Vermont	10	3	7														
Washington	82	55	27														
Wisconsin	76	58	18	4	4	0	5.26%	6.90%	0.00%								
West Virginia	35	3	32														
Wyoming	11	2	9														
Tribe - 05	1	1	0														
Tribe - 06	1	1	0														
Tribe - 07	1	0	1														
Tribe - 08	2	1	1														
Tribe - 09	3	1	2														
Total	3,876	1,979	1,897	177	125	52	4.57%	6.32%	2.74%	1	1	0.05%	0.05%	1	0	0.05%	0.00%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

[3] The HRL used for this analysis was 70 µg/L.

Table G1.e. DCPA Degradates - Statistics for All Detections by State (UCMR 1 March 2006 Data)

State [1,2]	Total # Detections	Statistics for Detections (in ug/L)			
		Minimum	Median	99th Percentile	Maximum
Alaska					
Alabama	1	2.50	2.50	2.50	2.50
Arkansas					
Arizona	22	1.00	2.20	31.00	31.00
California	102	1.00	1.85	12.00	13.00
Colorado					
Connecticut	2	3.00	3.30	3.60	3.60
D.C.					
Delaware	4	1.00	1.91	2.80	2.80
Florida	1	5.50	5.50	5.50	5.50
Georgia					
Guam	1	1.70	1.70	1.70	1.70
Hawaii					
Iowa	1	1.50	1.50	1.50	1.50
Idaho	2	1.50	1.65	1.80	1.80
Illinois	16	1.00	1.55	8.50	8.50
Indiana	9	1.30	2.50	4.90	4.90
Kansas					
Kentucky					
Louisiana					
Massachusetts	38	1.00	1.95	15.00	15.00
Maryland	1	1.70	1.70	1.70	1.70
Maine					
Michigan	42	1.00	1.00	190.00	190.00
Minnesota	20	1.00	1.75	3.00	3.00
Missouri					
N. Mariana Is.					
Mississippi					
Montana					
North Carolina	2	1.90	2.38	2.86	2.86
North Dakota					
Nebraska	27	1.20	1.80	11.00	11.00
New Hampshire	4	2.70	5.80	19.00	19.00
New Jersey	129	1.00	2.10	28.00	39.00
New Mexico					
Nevada					
New York	203	1.00	1.90	11.00	18.00
Ohio					
Oklahoma					
Oregon					
Pennsylvania	111	1.00	2.10	11.00	13.30
Puerto Rico					
Rhode Island	14	1.20	3.40	10.00	10.00
South Carolina					
South Dakota					
Tennessee	1	1.90	1.90	1.90	1.90
Texas					
Utah	10	1.10	5.15	24.00	24.00
Virginia					
Virgin Islands					
Vermont					
Washington					
Wisconsin	13	1.10	2.10	5.00	5.00
West Virginia					
Wyoming					
Tribe - 05					
Tribe - 06					
Tribe - 07					
Tribe - 08					
Tribe - 09					
Total	776	1.00	2.00	19.00	190.00

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G1.f. DCPA Degradates - Pop. Served Level Occurrence by State & Size Category (UCMR 1 March 2006 data)

State [1,2]	Total # PWSs	Total Population Served by PWSs			Population Served by PWSs with Detections			% Population Served by PWSs with Detections			Pop. Served by PWSs w/ Detections > 1/2 HRL[3]		Pop. Served by PWSs w/ Detections > HRL[3]	
		Total	Small	Large	Total	Small	Large	Total	Small	Large	#	%	#	%
Alaska	9	239,991	3,454	236,537										
Alabama	98	3,966,808	74,457	3,892,351	4,674	4,674	0	0.12%	6.28%	0.00%				
Arkansas	47	1,396,235	54,195	1,342,040										
Arizona	59	4,246,932	41,298	4,205,634	197,893	3,500	194,393	4.66%	8.47%	4.62%				
California	406	31,914,388	159,389	31,754,999	2,149,623	6,870	2,142,753	6.74%	4.31%	6.75%				
Colorado	56	4,085,452	37,427	4,048,025										
Connecticut	41	2,390,100	19,834	2,370,266	12,825	0	12,825	0.54%	0.00%	0.54%				
D.C.	1	927,055	0	927,055										
Delaware	8	536,260	6,800	529,460	236,130	0	236,130	44.03%	0.00%	44.60%				
Florida	238	15,323,786	117,516	15,206,270	11,305	0	11,305	0.07%	0.00%	0.07%				
Georgia	101	6,750,245	61,722	6,688,523										
Guam	5	105,219	5,504	99,715	61,750	0	61,750	58.69%	0.00%	61.93%				
Hawaii	17	1,110,726	15,462	1,095,264										
Iowa	47	1,686,720	26,705	1,660,015	22,697	0	22,697	1.35%	0.00%	1.37%				
Idaho	21	580,914	38,297	542,617	9,000	9,000	0	1.55%	23.50%	0.00%				
Illinois	133	7,645,947	117,151	7,528,796	126,235	8,604	117,631	1.65%	7.34%	1.56%				
Indiana	85	3,525,721	112,990	3,412,731	199,948	0	199,948	5.67%	0.00%	5.86%				
Kansas	41	1,739,325	38,626	1,700,699										
Kentucky	77	3,499,097	40,419	3,458,678										
Louisiana	82	2,742,078	88,423	2,653,655										
Massachusetts	132	6,456,374	63,293	6,393,081	432,706	14,200	418,506	6.70%	22.44%	6.55%				
Maryland	36	4,676,636	18,501	4,658,135	25,000	0	25,000	0.53%	0.00%	0.54%				
Maine	19	348,285	8,110	340,175										
Michigan	71	5,492,931	78,697	5,414,234	222,576	500	222,076	4.05%	0.64%	4.10%	500	0.01%	500	0.01%
Minnesota	85	3,005,782	58,334	2,947,448	307,259	0	307,259	10.22%	0.00%	10.42%				
Missouri	68	3,619,103	51,747	3,567,356										
N. Mariana Is.	3	68,836	6,140	62,696										
Mississippi	72	1,273,562	78,999	1,194,563										
Montana	13	350,315	15,516	334,799										
North Carolina	115	5,093,736	98,839	4,994,897	29,846	0	29,846	0.59%	0.00%	0.60%				
North Dakota	13	320,270	7,619	312,651										
Nebraska	20	965,769	23,535	942,234	152,459	14,330	138,129	15.79%	60.89%	14.66%				
New Hampshire	21	494,401	16,250	478,151	25,000	0	25,000	5.06%	0.00%	5.23%				
New Jersey	128	8,122,662	76,320	8,046,342	2,565,278	10,430	2,554,848	31.58%	13.67%	31.75%	738,337	9.09%		
New Mexico	32	1,112,569	7,195	1,105,374										
Nevada	11	1,625,791	5,856	1,619,935										
New York	159	19,937,535	94,031	19,843,504	2,723,480	0	2,723,480	13.66%	0.00%	13.72%				
Ohio	153	8,541,989	123,119	8,418,870										
Oklahoma	52	2,221,224	67,039	2,154,185										
Oregon	55	2,515,862	31,893	2,483,969										
Pennsylvania	165	9,008,128	92,665	8,915,463	1,191,445	4,954	1,186,491	13.23%	5.35%	13.31%				
Puerto Rico	85	4,782,110	36,651	4,745,459										
Rhode Island	13	824,052	4,740	819,312	135,079	0	135,079	16.39%	0.00%	16.49%				
South Carolina	59	2,669,268	50,104	2,619,164										
South Dakota	17	353,547	10,156	343,391										
Tennessee	105	4,269,873	73,215	4,196,658	11,566	0	11,566	0.27%	0.00%	0.28%				
Texas	266	16,706,429	251,073	16,455,356										
Utah	52	2,011,035	32,702	1,978,333	424,500	0	424,500	21.11%	0.00%	21.46%				
Virginia	58	5,137,941	22,928	5,115,013										
Virgin Islands	4	64,400	400	64,000										
Vermont	10	220,439	11,169	209,270										
Washington	82	4,490,251	41,836	4,448,415										
Wisconsin	76	2,769,896	88,774	2,681,122	79,095	10,871	68,224	2.86%	12.25%	2.54%				
West Virginia	35	781,825	34,761	747,064										
Wyoming	11	245,695	1,680	244,015										
Tribe - 05	1	191	191	0										
Tribe - 06	1	2,300	2,300	0										
Tribe - 07	1	498	498	0										
Tribe - 08	2	825	825	0										
Tribe - 09	3	31,444	13,200	18,244										
Total	3,876	225,026,778	2,760,570	222,266,208	11,357,369	87,933	11,269,436	5.05%	3.19%	5.07%	738,837	0.33%	500	< 0.01%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

[3] The HRL used for this analysis was 70 µg/L.

Table G1.g. DCPA Degradates - Pop. Served Level Occurrence by State & Source Water Type (UCMR 1 March 2006

State [1,2]	Total Population Served by PWSs			Population Served by PWSs with Detections			% Pop. Served by PWSs with Detections		
	Total	GW	SW	Total	GW	SW	Total	GW	SW
Alaska	239,991	61,692	178,299						
Alabama	3,966,808	770,193	3,196,615	4,674	4,674	0	0.12%	0.61%	0.00%
Arkansas	1,396,235	369,506	1,026,729						
Arizona	4,246,932	1,601,104	2,645,828	197,893	197,893	0	4.66%	12.36%	0.00%
California	31,914,388	7,097,065	24,817,323	2,149,623	1,456,149	693,474	6.74%	20.52%	2.79%
Colorado	4,085,452	306,580	3,778,872						
Connecticut	2,390,100	123,040	2,267,060	12,825	12,825	0	0.54%	10.42%	0.00%
D.C.	927,055	0	927,055						
Delaware	536,260	60,130	476,130	236,130	0	236,130	44.03%	0.00%	49.59%
Florida	15,323,786	12,501,454	2,822,332	11,305	11,305	0	0.07%	0.09%	0.00%
Georgia	6,750,245	744,191	6,006,054						
Guam	105,219	12,500	92,719	61,750	0	61,750	58.69%	0.00%	66.60%
Hawaii	1,110,726	1,025,526	85,200						
Iowa	1,686,720	534,972	1,151,748	22,697	22,697	0	1.35%	4.24%	0.00%
Idaho	580,914	377,665	203,249	9,000	9,000	0	1.55%	2.38%	0.00%
Illinois	7,645,947	1,642,735	6,003,212	126,235	124,735	1,500	1.65%	7.59%	0.02%
Indiana	3,525,721	1,299,570	2,226,151	199,948	161,000	38,948	5.67%	12.39%	1.75%
Kansas	1,739,325	327,349	1,411,976						
Kentucky	3,499,097	187,546	3,311,551						
Louisiana	2,742,078	1,039,978	1,702,100						
Massachusetts	6,456,374	1,443,348	5,013,026	432,706	168,267	264,439	6.70%	11.66%	5.28%
Maryland	4,676,636	534,638	4,141,998	25,000	25,000	0	0.53%	4.68%	0.00%
Maine	348,285	29,995	318,290						
Michigan	5,492,931	682,593	4,810,338	222,576	184,703	37,873	4.05%	27.06%	0.79%
Minnesota	3,005,782	1,753,601	1,252,181	307,259	307,259	0	10.22%	17.52%	0.00%
Missouri	3,619,103	805,343	2,813,760						
N. Mariana Is.	68,836	65,327	3,509						
Mississippi	1,273,562	951,094	322,468						
Montana	350,315	96,096	254,219						
North Carolina	5,093,736	711,126	4,382,610	29,846	29,846	0	0.59%	4.20%	0.00%
North Dakota	320,270	74,450	245,820						
Nebraska	965,769	434,460	531,309	152,459	152,459	0	15.79%	35.09%	0.00%
New Hampshire	494,401	87,020	407,381	25,000	0	25,000	5.06%	0.00%	6.14%
New Jersey	8,122,662	2,146,187	5,976,475	2,565,278	645,648	1,919,630	31.58%	30.08%	32.12%
New Mexico	1,112,569	954,906	157,663						
Nevada	1,625,791	22,393	1,603,398						
New York	19,937,535	3,538,426	16,399,109	2,723,480	2,445,403	278,077	13.66%	69.11%	1.70%
Ohio	8,541,989	1,788,032	6,753,957						
Oklahoma	2,221,224	190,419	2,030,805						
Oregon	2,515,862	402,978	2,112,884						
Pennsylvania	9,008,128	484,457	8,523,671	1,191,445	59,454	1,131,991	13.23%	12.27%	13.28%
Puerto Rico	4,782,110	470,189	4,311,921						
Rhode Island	824,052	98,740	725,312	135,079	56,000	79,079	16.39%	56.71%	10.90%
South Carolina	2,669,268	228,191	2,441,077						
South Dakota	353,547	82,540	271,007						
Tennessee	4,269,873	1,080,708	3,189,165	11,566	0	11,566	0.27%	0.00%	0.36%
Texas	16,706,429	3,053,892	13,652,537				0.00%	0.00%	0.00%
Utah	2,011,035	367,611	1,643,424	424,500	16,000	408,500	21.11%	4.35%	24.86%
Virginia	5,137,941	54,564	5,083,377						
Virgin Islands	64,400	0	64,400						
Vermont	220,439	2,149	218,290						
Washington	4,490,251	1,554,978	2,935,273						
Wisconsin	2,769,896	1,111,260	1,658,636	79,095	79,095	0	2.86%	7.12%	0.00%
West Virginia	781,825	60,546	721,279						
Wyoming	245,695	26,099	219,596						
Tribe - 05	191	191	0						
Tribe - 06	2,300	2,300	0						
Tribe - 07	498	0	498						
Tribe - 08	825	325	500						
Tribe - 09	31,444	3,200	28,244						
Total	225,026,778	55,477,168	169,549,610	11,357,369	6,169,412	5,187,957	5.05%	11.12%	3.06%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G2.a. DDE - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections[1]		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,492	1	0.01%	1,191	1	0.08%	26,939,587	17,670	0.07%
	> 50,000	5,422			190			26,476,158		
	Total	15,914	1	0.01%	1,381	1	0.07%	53,415,745	17,670	0.03%
Surface Water	10,001 - 50,000	7,436			1,187			33,405,163		
	> 50,000	7,196			509			136,681,205		
	Total	14,632	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,546	1	0.003%	3,077	1	0.03%	223,502,113	17,670	0.01%
All Systems										
Total Water Systems[2]		33,797	1	0.003%	3,874	1	0.03%	226,262,683	17,670	0.01%

[1] The single detection of DDE (equal to 3 ug/L) was found in a CWS in Alabama. This detection is greater than the HRL for DDE (HRL=0.2 ug/L).

[2] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G2.b. DDE - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	239	47	9	4	14	20
Arizona	1,322	59	11	1	34	13
California	8,564	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	103	8	2		2	4
Florida	1,166	238	31		189	18
Georgia	542	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	401	86	19	1	45	21
Kansas	244	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	318	77	23	4	27	23
Massachusetts	1,137	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,043	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,332	160	21	8	50	81
Ohio	550	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	307	59	5	6	10	38
South Dakota	103	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	682	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	150	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,797	3,874	590	207	1,381	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G2.c. DDE - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	77	2,696,031	75,303	13,120	817,331	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,874	226,262,683	1,939,815	820,755	53,415,745	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G3.a. 1,3-Dichloropropene - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data) Small Systems ONLY

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)[1]										
Ground Water	25 - 500	310			111			27,599		
	501 - 3,300	941			244			439,011		
	3,301 - 10,000	1,305			234			1,470,717		
	Total	2,556	0	0.00%	589	0	0.00%	1,937,327	0	0.00%
Surface Water	25 - 500	287			52			16,662		
	501 - 3,300	251			45			91,723		
	3,301 - 10,000	625			110			712,370		
	Total	1,163	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,719	0	0.00%	796	0	0.00%	2,758,082	0	0.00%

[1] 1,3-Dichloropropene was not officially monitored under UCMR, but was as added as an extra contaminant for monitoring by the (800) small systems. There are no UCMR data from large systems on the occurrence of 1,3-dichloropropene.

Table G3.b. 1,3-Dichloropropene - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems	
			GW	SW
Alaska	12	4	2	2
Alabama	87	15	12	3
Arkansas	44	13	9	4
Arizona	89	12	11	1
California	283	48	26	22
Colorado	74	10	3	7
Connecticut	40	6	3	3
D.C.				
Delaware	10	2	2	0
Florida	96	31	31	0
Georgia	82	21	13	8
Guam	4	1	0	1
Hawaii	26	3	3	0
Iowa	54	16	12	4
Idaho	57	8	6	2
Illinois	105	28	26	2
Indiana	59	20	19	1
Kansas	65	12	10	2
Kentucky	37	9	2	7
Louisiana	159	27	23	4
Massachusetts	82	12	10	2
Maryland	28	8	7	1
Maine	17	6	4	2
Michigan	90	24	21	3
Minnesota	69	16	16	0
Missouri	115	20	17	3
N. Mariana Is.	20	2	1	1
Mississippi	127	30	30	0
Montana	23	6	4	2
North Carolina	146	22	12	10
North Dakota	14	4	3	1
Nebraska	61	8	8	0
New Hampshire	29	6	4	2
New Jersey	71	16	14	2
New Mexico	31	8	6	2
Nevada	22	4	3	1
New York	130	29	21	8
Ohio	84	28	24	4
Oklahoma	67	15	7	8
Oregon	54	11	6	5
Pennsylvania	138	37	21	16
Puerto Rico	38	9	4	5
Rhode Island	16	2	2	0
South Carolina	63	11	5	6
South Dakota	14	4	3	1
Tennessee	63	14	2	12
Texas	296	71	61	10
Utah	34	7	4	3
Virginia	81	16	13	3
Virgin Islands	8	2	0	2
Vermont	17	4	3	1
Washington	91	17	14	3
Wisconsin	118	21	21	0
West Virginia	50	10	0	10
Wyoming	10	3	1	2
Tribe - 05	2	1	1	0
Tribe - 06	2	1	1	0
Tribe - 07	4	1	0	1
Tribe - 08	6	2	1	1
Tribe - 09	5	2	1	1
Total	3,719	796	589	207

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G3.c. 1,3-Dichloropropene - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems	
			GW	SW
Alaska	4	3,454	3,092	362
Alabama	15	74,457	67,068	7,389
Arkansas	13	54,195	35,209	18,986
Arizona	12	41,298	39,692	1,606
California	48	159,389	85,318	74,071
Colorado	10	37,427	12,175	25,252
Connecticut	6	19,834	1,309	18,525
D.C.				
Delaware	2	6,800	6,800	0
Florida	31	117,516	117,516	0
Georgia	21	59,234	26,148	33,086
Guam	1	5,504	0	5,504
Hawaii	3	15,462	15,462	0
Iowa	16	26,705	19,916	6,789
Idaho	8	38,297	35,100	3,197
Illinois	28	117,151	106,661	10,490
Indiana	20	112,990	104,078	8,912
Kansas	12	38,626	27,481	11,145
Kentucky	9	40,419	7,622	32,797
Louisiana	27	88,423	75,303	13,120
Massachusetts	12	63,293	50,393	12,900
Maryland	8	18,501	12,301	6,200
Maine	6	8,110	2,955	5,155
Michigan	24	78,697	57,873	20,824
Minnesota	16	58,334	58,334	0
Missouri	20	51,747	38,276	13,471
N. Mariana Is.	2	6,140	2,631	3,509
Mississippi	30	78,999	78,999	0
Montana	6	15,516	10,314	5,202
North Carolina	22	98,839	47,141	51,698
North Dakota	4	7,619	7,416	203
Nebraska	8	23,535	23,535	0
New Hampshire	6	16,250	10,620	5,630
New Jersey	16	76,320	60,020	16,300
New Mexico	8	7,195	6,625	570
Nevada	4	5,856	5,393	463
New York	29	94,031	45,407	48,624
Ohio	28	123,119	104,131	18,988
Oklahoma	15	67,039	23,784	43,255
Oregon	11	31,893	12,378	19,515
Pennsylvania	37	92,665	42,012	50,653
Puerto Rico	9	36,651	24,631	12,020
Rhode Island	2	4,740	4,740	0
South Carolina	11	50,104	14,485	35,619
South Dakota	4	10,156	9,780	376
Tennessee	14	73,215	2,533	70,682
Texas	71	251,073	228,336	22,737
Utah	7	32,702	16,417	16,285
Virginia	16	22,928	13,849	9,079
Virgin Islands	2	400	0	400
Vermont	4	11,169	2,149	9,020
Washington	17	41,836	38,029	3,807
Wisconsin	21	88,774	88,774	0
West Virginia	10	34,761	0	34,761
Wyoming	3	1,680	1,100	580
Tribe - 05	1	191	191	0
Tribe - 06	1	2,300	2,300	0
Tribe - 07	1	498	0	498
Tribe - 08	2	825	325	500
Tribe - 09	2	13,200	3,200	10,000
Total	796	2,758,082	1,937,327	820,755

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G4.a. 2,4-Dinitrotoluene - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections[1]		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,519			1,190			26,929,381		
	> 50,000	5,425			190			26,476,158		
	Total	15,944	0	0.00%	1,380	0	0.00%	53,405,539	0	0.00%
Surface Water	10,001 - 50,000	7,408	1	0.01%	1,187	1	0.08%	33,405,163	37,811	0.11%
	> 50,000	7,161			509			136,681,205		
	Total	14,569	1	0.01%	1,696	1	0.06%	170,086,368	37,811	0.02%
All Large Systems		30,513	1	0.003%	3,076	1	0.03%	223,491,907	37,811	0.02%
All Systems										
Total Water Systems[2]		33,764	1	0.003%	3,873	1	0.03%	226,252,477	37,811	0.02%

[1] The single detection of 2,4-dinitrotoluene (equal to 333 ug/L) was found in a CWS in Tennessee. This detection is greater than the HRL for 2,4-dinitrotoluene (HRL=0.05 ug/L).

[2] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G4.b. 2,4-Dinitrotoluene - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	236	47	9	4	14	20
Arizona	1,312	59	11	1	34	13
California	8,538	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,166	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	397	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	319	76	23	4	26	23
Massachusetts	1,137	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,330	160	21	8	50	81
Ohio	548	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,259	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	103	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	682	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,764	3,873	590	207	1,380	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G4.c. 2,4-Dinitrotoluene - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	76	2,685,825	75,303	13,120	807,125	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,873	226,252,477	1,939,815	820,755	53,405,539	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G5.a. 2,6-Dinitrotoluene - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,519			1,190			26,929,381		
	> 50,000	5,427			190			26,476,158		
	Total	15,946	0	0.00%	1,380	0	0.00%	53,405,539	0	0.00%
Surface Water	10,001 - 50,000	7,406			1,187			33,405,163		
	> 50,000	7,162			509			136,681,205		
	Total	14,568	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,514	0	0.00%	3,076	0	0.00%	223,491,907	0	0.00%
All Systems										
Total Water Systems[1]		33,765	0	0.00%	3,873	0	0.00%	226,252,477	0	0.00%

[1] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G5.b. 2,6-Dinitrotoluene - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	236	47	9	4	14	20
Arizona	1,314	59	11	1	34	13
California	8,538	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,166	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	397	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	319	76	23	4	26	23
Massachusetts	1,137	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,331	160	21	8	50	81
Ohio	548	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	103	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	462	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	683	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,765	3,873	590	207	1,380	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G5.c. 2,6-Dinitrotoluene - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	76	2,685,825	75,303	13,120	807,125	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,873	226,252,477	1,939,815	820,755	53,405,539	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G6.a. EPTC - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,529			1,190			26,929,381		
	> 50,000	5,418			190			26,476,158		
	Total	15,947	0	0.00%	1,380	0	0.00%	53,405,539	0	0.00%
Surface Water	10,001 - 50,000	7,424			1,187			33,405,163		
	> 50,000	7,176			509			136,681,205		
	Total	14,600	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,547	0	0.00%	3,076	0	0.00%	223,491,907	0	0.00%
All Systems										
Total Water Systems[1]		33,798	0	0.00%	3,873	0	0.00%	226,252,477	0	0.00%

[1] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G6.b. EPTC - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	239	47	9	4	14	20
Arizona	1,315	59	11	1	34	13
California	8,566	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,166	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	400	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	321	76	23	4	26	23
Massachusetts	1,135	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	89	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,320	160	21	8	50	81
Ohio	548	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	351	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	106	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	685	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,798	3,873	590	207	1,380	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G6.c. EPTC - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	76	2,685,825	75,303	13,120	807,125	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,873	226,252,477	1,939,815	820,755	53,405,539	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G7.a. Fonofos - Sample-, System-, and Population Served-Level Occurrence (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	95			43			10,296		
	501 - 3,300	151			43			79,739		
	3,301 - 10,000	134			28			185,150		
	Total	380	0	0.00%	114	0	0.00%	275,185	0	0.00%
Surface Water	25 - 500	65			17			4,744		
	501 - 3,300	64			17			29,902		
	3,301 - 10,000	134			30			198,305		
	Total	263	0	0.00%	64	0	0.00%	232,951	0	0.00%
All Small Systems		643	0	0.00%	178	0	0.00%	508,136	0	0.00%
Large Systems (Statistical Sample)										
Ground Water	10,001 - 50,000	272			28			792,573		
	> 50,000	611			22			7,207,549		
	Total	883	0	0.00%	50	0	0.00%	8,000,122	0	0.00%
Surface Water	10,001 - 50,000	199			34			1,291,958		
	> 50,000	581			33			30,967,264		
	Total	780	0	0.00%	67	0	0.00%	32,259,222	0	0.00%
All Large Systems		1,663	0	0.00%	117	0	0.00%	40,259,344	0	0.00%
All Systems										
Total Water Systems		2,306	0	0.00%	295	0	0.00%	40,767,480	0	0.00%

Table G7.b. Fonofos - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	2	1		1		
Alabama	12	3	1	1		1
Arkansas	21	5	2	2		1
Arizona	35	2		1	1	
California	765	39	5	8	13	13
Colorado	32	6	1	3		2
Connecticut	21	2		1		1
D.C.						
Delaware						
Florida	98	15	6		9	
Georgia	24	8	6	2		
Guam						
Hawaii	2	1	1			
Iowa	46	7	4	1	2	
Idaho	2	1	1			
Illinois	2	1	1			
Indiana	18	5	3		1	1
Kansas	9	3	2	1		
Kentucky	33	7		2	1	4
Louisiana	53	9	6	1	1	1
Massachusetts	29	5	2			3
Maryland						
Maine	6	2	1	1		
Michigan	30	8	6	1		1
Minnesota	33	6	3		2	1
Missouri	34	4	1	1		2
N. Mariana Is.	7	2	1	1		
Mississippi	28	7	6		1	
Montana	16	3	1	1		1
North Carolina	52	9	3	4		2
North Dakota	4	1		1		
Nebraska	18	2	1			1
New Hampshire	10	2	1		1	
New Jersey	51	10	5		3	2
New Mexico	78	8	3	2	3	
Nevada	4	1	1			
New York	122	12	2	1	4	5
Ohio	20	7	3	1	2	1
Oklahoma	10	3	1	1		1
Oregon	12	3		2		1
Pennsylvania	76	17	8	4	1	4
Puerto Rico	45	6	1	2		3
Rhode Island	11	2				2
South Carolina	13	4	1	2		1
South Dakota	6	2	1			1
Tennessee	51	9	1	5	1	2
Texas	217	19	8	4	2	5
Utah	4	1		1		
Virginia	8	3	2	1		
Virgin Islands						
Vermont	12	4	2			2
Washington	46	6	3	1	1	1
Wisconsin	66	9	7		1	1
West Virginia	8	2		2		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	4	1		1		
Tribe - 08						
Tribe - 09						
Total	2,306	295	114	64	50	67

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G7.c. Fonofos - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	1	188		188		
Alabama	3	50,304	6,150	2,154		42,000
Arkansas	5	231,182	8,639	6,656		215,887
Arizona	2	22,606		1,606	21,000	
California	39	9,456,619	12,314	23,867	1,053,905	8,366,533
Colorado	6	1,415,583	5,758	10,495		1,399,330
Connecticut	2	48,908		8,500		40,408
D.C.						
Delaware						
Florida	15	3,085,161	13,345		3,071,816	
Georgia	8	12,586	5,180	7,406		
Guam						
Hawaii	1	5,008	5,008			
Iowa	7	118,082	8,533	2,580	106,969	
Idaho	1	450	450			
Illinois	1	970	970			
Indiana	5	298,249	15,938		39,000	243,311
Kansas	3	12,552	3,303	9,249		
Kentucky	7	416,408		8,089	22,428	385,891
Louisiana	9	300,226	23,544	4,500	62,210	209,972
Massachusetts	5	176,784	10,400			166,384
Maryland						
Maine	2	265	185	80		
Michigan	8	62,019	12,908	9,006		40,105
Minnesota	6	581,274	13,150		119,440	448,684
Missouri	4	1,591,818	2,118	5,200		1,584,500
N. Mariana Is.	2	6,140	2,631	3,509		
Mississippi	7	48,956	8,988		39,968	
Montana	3	34,328	445	4,802		29,081
North Carolina	9	255,993	3,104	18,365		234,524
North Dakota	1	203		203		
Nebraska	2	510,453	4,033			506,420
New Hampshire	2	28,200	200		28,000	
New Jersey	10	491,189	11,200		93,489	386,500
New Mexico	8	498,770	3,200	570	495,000	
Nevada	1	1,383	1,383			
New York	12	7,327,997	740	8,888	644,310	6,674,059
Ohio	7	1,752,015	10,086	7,000	82,783	1,652,146
Oklahoma	3	17,740	110	1,780		15,850
Oregon	3	32,860		6,200		26,660
Pennsylvania	17	185,358	10,957	10,601	16,000	147,800
Puerto Rico	6	1,691,960	7,616	7,376		1,676,968
Rhode Island	2	459,312				459,312
South Carolina	4	52,976	2,886	9,350		40,740
South Dakota	2	28,958	4,300			24,658
Tennessee	9	783,081	1,526	28,669	654,267	98,619
Texas	19	6,382,552	15,786	7,556	1,374,537	4,984,673
Utah	1	9,800		9,800		
Virginia	3	5,258	1,258	4,000		
Virgin Islands						
Vermont	4	62,749	1,149			61,600
Washington	6	1,254,766	10,289	1,313	22,000	1,221,164
Wisconsin	9	953,848	25,405		53,000	875,443
West Virginia	2	2,895		2,895		
Wyoming						
Tribe - 05						
Tribe - 06						
Tribe - 07	1	498		498		
Tribe - 08						
Tribe - 09						
Total	295	40,767,480	275,185	232,951	8,000,122	32,259,222

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G8.a. MTBE - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level					Population-Served Level				
		Total # of Samples	Detections		Total # of Systems	Detections				Total Pop. Served by Systems	Detections			
						Systems with One or More		Systems with Two or More			Pop. Served by Systems with One or More		Pop. Served by Systems with Two or More	
			#	%		#	%	#	%		#	%	#	%
Small Systems (Statistical Sample)														
GW	25 - 500	259			111					27,599				
	501 - 3,300	871	3	0.34%	244	3	1.2%			439,011	4,150	0.95%		
	3,301 - 10,000	1,211			234					1,470,717				
	Total	2,341	3	0.13%	589	3	0.51%	0	0.00%	1,937,327	4,150	0.21%	0	0.00%
SW	25 - 500	224			52					16,662				
	501 - 3,300	183			45					91,723				
	3,301 - 10,000	520			110					712,370				
	Total	927	0	0.00%	207	0	0.00%	0	0.00%	820,755	0	0.00%	0	0.00%
All Small Systems		3,268	3	0.09%	796	3	0.38%	0	0.00%	2,758,082	4,150	0.15%	0	0.00%
Large Systems (Census)														
GW	10,001 - 50,000	10,408	14	0.13%	1,192	9	0.76%	5	0.42%	26,911,853	179,894	0.67%	104,596	0.39%
	> 50,000	5,516	3	0.05%	189	3	1.59%		0.00%	26,361,273	241,292	0.92%		
	Total	15,924	17	0.11%	1,381	12	0.87%	5	0.36%	53,273,126	421,186	0.79%	104,596	0.20%
SW	10,001 - 50,000	7,419	3	0.04%	1,185	2	0.17%	1	0.08%	33,277,623	55,388	0.17%	22,388	0.07%
	> 50,000	7,157	3	0.04%	509	2	0.39%	1	0.20%	136,681,205	272,909	0.20%	69,199	0.05%
	Total	14,576	6	0.04%	1,694	4	0.24%	2	0.12%	169,958,828	328,297	0.19%	91,587	0.05%
All Large Systems		30,500	23	0.08%	3,075	16	0.52%	7	0.23%	223,231,954	749,483	0.34%	196,183	0.09%
All (Small & Large) Systems														
Total Water Systems[1]		33,768	26	0.08%	3,871	19	0.49%	7	0.18%	225,990,036	753,633	0.33%	196,183	0.09%

[1] The UCMR small water systems (population served $\leq$ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G8.b. MTBE - Statistics for All Detections (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Total # of Detections	Statistics for All Recorded Values Above the Detection Limit (in µg/L)				
			Minimum	Mean	Median	99th Percentile	Maximum
Small Systems (Statistical Sample)							
GW	25 - 500 [1]	0					
	501 - 3,300	3	6.00	22.57	12.70	49.00	49.00
	3,301 - 10,000	0					
	Total	3	6.00	22.57	12.70	49.00	49.00
SW	25 - 500	0					
	501 - 3,300	0					
	3,301 - 10,000	0					
	Total	0					
All Small Systems		3	6.00	22.57	12.70	49.00	49.00
Large Systems (Census)							
GW	10,001 - 50,000	14	5.00	14.25	8.20	48.00	48.00
	> 50,000	3	5.40	15.83	6.10	36.00	36.00
	Total	17	5.00	14.53	7.00	48.00	48.00
SW	10,001 - 50,000	3	8.80	18.27	13.00	33.00	33.00
	> 50,000	3	8.00	8.87	9.00	9.60	9.60
	Total	6	8.00	13.57	9.30	33.00	33.00
All Large Systems		23	5.00	14.28	9.00	48.00	48.00
All (Small & Large) Systems							
Total Water Systems[2]		26	5.00	15.24	9.20	49.00	49.00

[1] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, combined large and small summary statistics do not accurately represent national occurrence.

Table G8.c. MTBE - System Level Occurrence by State & Size Category (UCMR 1 March 2006 data)[1]

State [2,3]	Total # Samples	Total # PWSs			# PWSs with Detections			% PWSs with Detections		
		Total	Small	Large	Total	Small	Large	Total	Small	Large
Alaska	53	9	4	5						
Alabama	809	98	15	83						
Arkansas	229	47	13	34						
Arizona	1,286	59	12	47						
California	8,566	407	48	359	2	0	2	0.49%	0.00%	0.56%
Colorado	397	56	10	46						
Connecticut	370	41	6	35	1	0	1	2.44%	0.00%	2.86%
D.C.	8	1	0	1						
Delaware	102	8	2	6						
Florida	1,164	238	31	207						
Georgia	564	99	21	78	2	1	1	2.02%	4.76%	1.28%
Guam	267	5	1	4						
Hawaii	392	17	3	14						
Iowa	213	47	16	31						
Idaho	247	21	8	13						
Illinois	745	133	28	105	1	0	1	0.75%	0.00%	0.95%
Indiana	410	86	20	66						
Kansas	248	41	12	29						
Kentucky	344	77	9	68						
Louisiana	488	84	27	57						
Massachusetts	1,124	132	12	120	1	1	0	0.76%	8.33%	0.00%
Maryland	172	36	8	28						
Maine	91	19	6	13						
Michigan	362	71	24	47						
Minnesota	431	85	16	69						
Missouri	452	68	20	48	1	1	0	1.47%	5.00%	0.00%
N. Mariana Is.	19	2	2	0						
Mississippi	525	72	30	42						
Montana	136	13	6	7						
North Carolina	1,046	115	22	93						
North Dakota	41	13	4	9						
Nebraska	231	20	8	12						
New Hampshire	134	21	6	15	2	0	2	9.52%	0.00%	13.33%
New Jersey	1,010	123	16	107	2	0	2	1.63%	0.00%	1.87%
New Mexico	353	32	8	24	1	0	1	3.13%	0.00%	4.17%
Nevada	73	11	4	7						
New York	2,369	160	29	131	2	0	2	1.25%	0.00%	1.53%
Ohio	544	153	28	125						
Oklahoma	320	52	15	37						
Oregon	355	55	11	44						
Pennsylvania	1,256	165	37	128	1	0	1	0.61%	0.00%	0.78%
Puerto Rico	720	85	9	76						
Rhode Island	104	13	2	11						
South Carolina	289	59	11	48						
South Dakota	101	17	4	13	1	0	1	5.88%	0.00%	7.69%
Tennessee	546	105	14	91	1	0	1	0.95%	0.00%	1.10%
Texas	1,724	264	71	193						
Utah	475	52	7	45						
Virginia	296	58	16	42						
Virgin Islands	26	4	2	2						
Vermont	40	10	4	6						
Washington	679	82	17	65						
Wisconsin	553	76	21	55						
West Virginia	168	35	10	25	1	0	1	2.86%	0.00%	4.00%
Wyoming	70	11	3	8						
Tribe - 05	2	1	1	0						
Tribe - 06	2	1	1	0						
Tribe - 07	4	1	1	0						
Tribe - 08	6	2	2	0						
Tribe - 09	17	3	2	1						
Total	33,768	3,871	796	3,075	19	3	16	0.49%	0.38%	0.52%

[1] There is no HRL for this contaminant. Thus, no occurrence analyses relative to the HRL are presented in this table.

[2] The UCMR data are not representative at the state-level.

[3] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G8.d. MTBE - System Level Occurrence by State & Source Water Type (UCMR 1 March 2006 data)[1]

State [2,3]	Total # PWSs			# PWSs with Detections			% PWSs with Detections		
	Total	GW	SW	Total	GW	SW	Total	GW	SW
Alaska	9	4	5						
Alabama	98	42	56						
Arkansas	47	23	24						
Arizona	59	45	14						
California	407	178	229	2	1	1	0.49%	0.56%	0.44%
Colorado	56	15	41						
Connecticut	41	11	30	1	1	0	2.44%	9.09%	0.00%
D.C.	1	0	1						
Delaware	8	4	4						
Florida	238	220	18						
Georgia	99	36	63	2	1	1	2.02%	2.78%	1.59%
Guam	5	1	4						
Hawaii	17	15	2						
Iowa	47	27	20						
Idaho	21	17	4						
Illinois	133	84	49	1	1	0	0.75%	1.19%	0.00%
Indiana	86	64	22						
Kansas	41	23	18						
Kentucky	77	8	69						
Louisiana	84	57	27						
Massachusetts	132	68	64	1	1	0	0.76%	1.47%	0.00%
Maryland	36	18	18						
Maine	19	6	13						
Michigan	71	38	33						
Minnesota	85	75	10						
Missouri	68	43	25	1	1	0	1.47%	2.33%	0.00%
N. Mariana Is.	2	1	1						
Mississippi	72	70	2						
Montana	13	6	7						
North Carolina	115	38	77						
North Dakota	13	6	7						
Nebraska	20	18	2						
New Hampshire	21	8	13	2	1	1	9.52%	12.50%	7.69%
New Jersey	123	84	39	2	2	0	1.63%	2.38%	0.00%
New Mexico	32	25	7	1	1	0	3.13%	4.00%	0.00%
Nevada	11	4	7						
New York	160	71	89	2	2	0	1.25%	2.82%	0.00%
Ohio	153	85	68						
Oklahoma	52	15	37						
Oregon	55	20	35						
Pennsylvania	165	43	122	1	0	1	0.61%	0.00%	0.82%
Puerto Rico	85	24	61						
Rhode Island	13	6	7						
South Carolina	59	15	44						
South Dakota	17	8	9	1	1	0	5.88%	12.50%	0.00%
Tennessee	105	19	86	1	1	0	0.95%	5.26%	0.00%
Texas	264	126	138						
Utah	52	17	35						
Virginia	58	14	44						
Virgin Islands	4	0	4						
Vermont	10	3	7						
Washington	82	55	27						
Wisconsin	76	58	18						
West Virginia	35	3	32	1	1	0	2.86%	33.33%	0.00%
Wyoming	11	2	9						
Tribe - 05	1	1	0						
Tribe - 06	1	1	0						
Tribe - 07	1	0	1						
Tribe - 08	2	1	1						
Tribe - 09	3	1	2						
Total	3,871	1,970	1,901	19	15	4	0.49%	0.76%	0.21%

[1] There is no HRL for this contaminant. Thus, no occurrence analyses relative to the HRL are presented in this table.

[2] The UCMR data are not representative at the state-level.

[3] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G8.e. MTBE - Statistics for All Detections by State (UCMR 1 March 2006 Data)

State [1,2]	Total # Detections	Statistics for Detections (in ug/L)			
		Minimum	Median	99th Percentile	Maximum
Alaska					
Alabama					
Arkansas					
Arizona					
California	3	6.00	9.60	19.40	19.40
Colorado					
Connecticut	2	5.00	5.90	6.80	6.80
D.C.					
Delaware					
Florida					
Georgia	3	8.80	12.70	13.00	13.00
Guam					
Hawaii					
Iowa					
Idaho					
Illinois	1	7.00	7.00	7.00	7.00
Indiana					
Kansas					
Kentucky					
Louisiana					
Massachusetts	1	6.00	6.00	6.00	6.00
Maryland					
Maine					
Michigan					
Minnesota					
Missouri	1	49.00	49.00	49.00	49.00
N. Mariana Is.					
Mississippi					
Montana					
North Carolina					
North Dakota					
Nebraska					
New Hampshire	2	9.40	21.20	33.00	33.00
New Jersey	3	5.50	14.50	36.00	36.00
New Mexico	1	16.00	16.00	16.00	16.00
Nevada					
New York	3	5.40	6.10	48.00	48.00
Ohio					
Oklahoma					
Oregon					
Pennsylvania	2	8.00	8.50	9.00	9.00
Puerto Rico					
Rhode Island					
South Carolina					
South Dakota	2	5.85	11.33	16.80	16.80
Tennessee	1	6.10	6.10	6.10	6.10
Texas					
Utah					
Virginia					
Virgin Islands					
Vermont					
Washington					
Wisconsin					
West Virginia	1	33.20	33.20	33.20	33.20
Wyoming					
Tribe - 05					
Tribe - 06					
Tribe - 07					
Tribe - 08					
Tribe - 09					
Total	26	5.00	9.20	49.00	49.00

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G8.f. MTBE - Population Served Level Occurrence by State & Size Category (UCMR 1 March 2006 data)[1]

State [2,3]	Total # PWSs	Total Population Served by PWSs			Population Served by PWSs with Detections			% Population Served by PWSs with Detections		
		Total	Small	Large	Total	Small	Large	Total	Small	Large
Alaska	9	239,991	3,454	236,537						
Alabama	98	3,966,808	74,457	3,892,351						
Arkansas	47	1,396,235	54,195	1,342,040						
Arizona	59	4,246,932	41,298	4,205,634						
California	407	33,137,788	159,389	32,978,399	218,710	0	218,710	0.66%	0.00%	0.66%
Colorado	56	4,085,452	37,427	4,048,025						
Connecticut	41	2,390,100	19,834	2,370,266	15,245	0	15,245	0.64%	0.00%	0.64%
D.C.	1	927,055	0	927,055						
Delaware	8	536,260	6,800	529,460						
Florida	238	15,323,786	117,516	15,206,270						
Georgia	99	6,732,757	59,234	6,673,523	23,138	750	22,388	0.34%	1.27%	0.34%
Guam	5	105,219	5,504	99,715						
Hawaii	17	1,110,726	15,462	1,095,264						
Iowa	47	1,686,720	26,705	1,660,015						
Idaho	21	580,914	38,297	542,617						
Illinois	133	7,645,947	117,151	7,528,796	17,700	0	17,700	0.23%	0.00%	0.24%
Indiana	86	3,539,721	112,990	3,426,731						
Kansas	41	1,739,325	38,626	1,700,699						
Kentucky	77	3,499,097	40,419	3,458,678						
Louisiana	84	2,818,393	88,423	2,729,970						
Massachusetts	132	6,456,374	63,293	6,393,081	2,100	2,100	0	0.03%	3.32%	0.00%
Maryland	36	4,676,636	18,501	4,658,135						
Maine	19	348,285	8,110	340,175						
Michigan	71	5,492,931	78,697	5,414,234						
Minnesota	85	3,005,782	58,334	2,947,448						
Missouri	68	3,619,103	51,747	3,567,356	1,300	1,300	0	0.04%	2.51%	0.00%
N. Mariana Is.	2	6,140	6,140							
Mississippi	72	1,273,562	78,999	1,194,563						
Montana	13	350,315	15,516	334,799						
North Carolina	115	5,093,736	98,839	4,994,897						
North Dakota	13	320,270	7,619	312,651						
Nebraska	20	965,769	23,535	942,234						
New Hampshire	21	494,401	16,250	478,151	50,000	0	50,000	10.11%	0.00%	10.46%
New Jersey	123	7,839,337	76,320	7,763,017	99,091	0	99,091	1.26%	0.00%	1.28%
New Mexico	32	1,112,569	7,195	1,105,374	28,750	0	28,750	2.58%	0.00%	2.60%
Nevada	11	1,625,791	5,856	1,619,935						
New York	160	19,956,351	94,031	19,862,320	123,760	0	123,760	0.62%	0.00%	0.62%
Ohio	153	8,541,989	123,119	8,418,870						
Oklahoma	52	2,221,224	67,039	2,154,185						
Oregon	55	2,515,862	31,893	2,483,969						
Pennsylvania	165	9,008,128	92,665	8,915,463	69,199	0	69,199	0.77%	0.00%	0.78%
Puerto Rico	85	4,782,110	36,651	4,745,459						
Rhode Island	13	824,052	4,740	819,312						
South Carolina	59	2,669,268	50,104	2,619,164						
South Dakota	17	353,547	10,156	343,391	13,876	0	13,876	3.92%	0.00%	4.04%
Tennessee	105	4,269,873	73,215	4,196,658	78,916	0	78,916	1.85%	0.00%	1.88%
Texas	264	16,700,665	251,073	16,449,592						
Utah	52	2,011,035	32,702	1,978,333						
Virginia	58	5,137,941	22,928	5,115,013						
Virgin Islands	4	64,400	400	64,000						
Vermont	10	220,439	11,169	209,270						
Washington	82	4,490,251	41,836	4,448,415						
Wisconsin	76	2,769,896	88,774	2,681,122						
West Virginia	35	781,825	34,761	747,064	11,848	0	11,848	1.52%	0.00%	1.59%
Wyoming	11	245,695	1,680	244,015						
Tribe - 05	1	191	191							
Tribe - 06	1	2,300	2,300							
Tribe - 07	1	498	498							
Tribe - 08	2	825	825							
Tribe - 09	3	31,444	13,200	18,244						
Total	3,871	225,990,036	2,758,082	223,231,954	753,633	4,150	749,483	0.33%	0.15%	0.34%

[1] There is no HRL for this contaminant. Thus, no occurrence analyses relative to the HRL are presented in this table.

[2] The UCMR data are not representative at the state-level.

[3] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G8.g. MTBE - Population Served Level Occurrence by State & Source Water Type (UCMR 1 March 2006 data)

State [1,2]	Total Population Served by PWSs			Population Served by PWSs with Detections			% Pop. Served by PWSs with Detections		
	Total	GW	SW	Total	GW	SW	Total	GW	SW
Alaska	239,991	61,692	178,299						
Alabama	3,966,808	770,193	3,196,615						
Arkansas	1,396,235	369,506	1,026,729						
Arizona	4,246,932	1,601,104	2,645,828						
California	33,137,788	7,097,065	26,040,723	218,710	15,000	203,710	0.66%	0.21%	0.78%
Colorado	4,085,452	306,580	3,778,872						
Connecticut	2,390,100	123,040	2,267,060	15,245	15,245	0	0.64%	12.39%	0.00%
D.C.	927,055	0	927,055						
Delaware	536,260	60,130	476,130						
Florida	15,323,786	12,501,454	2,822,332						
Georgia	6,732,757	726,703	6,006,054	23,138	750	22,388	0.34%	0.10%	0.37%
Guam	105,219	12,500	92,719						
Hawaii	1,110,726	1,025,526	85,200						
Iowa	1,686,720	534,972	1,151,748						
Idaho	580,914	377,665	203,249						
Illinois	7,645,947	1,642,735	6,003,212	17,700	17,700	0	0.23%	1.08%	0.00%
Indiana	3,539,721	1,299,570	2,240,151						
Kansas	1,739,325	327,349	1,411,976						
Kentucky	3,499,097	187,546	3,311,551						
Louisiana	2,818,393	1,014,996	1,803,397						
Massachusetts	6,456,374	1,443,348	5,013,026	2,100	2,100	0	0.03%	0.15%	0.00%
Maryland	4,676,636	534,638	4,141,998						
Maine	348,285	29,995	318,290						
Michigan	5,492,931	682,593	4,810,338						
Minnesota	3,005,782	1,753,601	1,252,181						
Missouri	3,619,103	805,343	2,813,760	1,300	1,300	0	0.04%	0.16%	0.00%
N. Mariana Is.	6,140	2,631	3,509						
Mississippi	1,273,562	951,094	322,468						
Montana	350,315	96,096	254,219						
North Carolina	5,093,736	711,126	4,382,610						
North Dakota	320,270	74,450	245,820						
Nebraska	965,769	434,460	531,309						
New Hampshire	494,401	87,020	407,381	50,000	17,000	33,000	10.11%	19.54%	8.10%
New Jersey	7,839,337	1,970,402	5,868,935	99,091	99,091	0	1.27%	5.08%	0.00%
New Mexico	1,112,569	954,906	157,663	28,750	28,750	0	2.61%	3.05%	0.00%
Nevada	1,625,791	22,393	1,603,398						
New York	19,956,351	3,538,426	16,417,925	123,760	123,760	0	0.62%	3.50%	0.00%
Ohio	8,541,989	1,788,032	6,753,957						
Oklahoma	2,221,224	190,419	2,030,805						
Oregon	2,515,862	402,978	2,112,884						
Pennsylvania	9,008,128	484,457	8,523,671	69,199	0	69,199	0.77%	0.00%	0.81%
Puerto Rico	4,782,110	470,189	4,311,921						
Rhode Island	824,052	98,740	725,312						
South Carolina	2,669,268	228,191	2,441,077						
South Dakota	353,547	82,540	271,007	13,876	13,876	0	3.92%	16.81%	0.00%
Tennessee	4,269,873	1,080,708	3,189,165	78,916	78,916	0	1.85%	7.30%	0.00%
Texas	16,700,665	3,068,128	13,632,537						
Utah	2,011,035	367,611	1,643,424						
Virginia	5,137,941	54,564	5,083,377						
Virgin Islands	64,400	0	64,400						
Vermont	220,439	2,149	218,290						
Washington	4,490,251	1,554,978	2,935,273						
Wisconsin	2,769,896	1,111,260	1,658,636						
West Virginia	781,825	60,546	721,279	11,848	11,848	0	1.52%	19.57%	0.00%
Wyoming	245,695	26,099	219,596						
Tribe - 05	191	191	0						
Tribe - 06	2,300	2,300	0						
Tribe - 07	498	0	498						
Tribe - 08	825	325	500						
Tribe - 09	31,444	3,200	28,244						
Total	225,990,036	55,210,453	170,779,583	753,633	425,336	328,297	0.33%	0.77%	0.19%

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G9.a. Terbacil - Occurrence Based on Samples, Systems, and Population Served (UCMR 1 March 2006 Data)

Water Type	System Size by Population Served	Sample Level			System Level			Population Served-Level		
		Total Number of Samples	Detections		Total Number of Systems Sampled	Systems with Detections		Total Population Served	Pop. Served by Systems with Detections	
			Number	Percent		Number	Percent		Number	Percent
Small Systems (Statistical Sample)										
Ground Water	25 - 500	259			111			27,599		
	501 - 3,300	879			245			441,499		
	3,301 - 10,000	1,204			234			1,470,717		
	Total	2,342	0	0.00%	590	0	0.00%	1,939,815	0	0.00%
Surface Water	25 - 500	220			52			16,662		
	501 - 3,300	181			45			91,723		
	3,301 - 10,000	508			110			712,370		
	Total	909	0	0.00%	207	0	0.00%	820,755	0	0.00%
All Small Systems		3,251	0	0.00%	797	0	0.00%	2,760,570	0	0.00%
Large Systems (Census)										
Ground Water	10,001 - 50,000	10,516			1,190			26,929,381		
	> 50,000	5,418			190			26,476,158		
	Total	15,934	0	0.00%	1,380	0	0.00%	53,405,539	0	0.00%
Surface Water	10,001 - 50,000	7,430			1,187			33,405,163		
	> 50,000	7,185			509			136,681,205		
	Total	14,615	0	0.00%	1,696	0	0.00%	170,086,368	0	0.00%
All Large Systems		30,549	0	0.00%	3,076	0	0.00%	223,491,907	0	0.00%
All Systems										
Total Water Systems[1]		33,800	0	0.00%	3,873	0	0.00%	226,252,477	0	0.00%

[1] The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Combined small and large system occurrence summaries accurately present the actual UCMR monitoring results. However, only the summary findings expressed as percentages accurately reflect national occurrence; combined large and small summaries based on numerical counts of detections at the sample, system, and population-served levels do not accurately represent national occurrence.

Table G9.b. Terbacil - Number of PWSs by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of Samples	Total Number of PWSs	No. of Small Systems		No. of Large Systems	
			GW	SW	GW	SW
Alaska	53	9	2	2	2	3
Alabama	809	98	12	3	30	53
Arkansas	239	47	9	4	14	20
Arizona	1,315	59	11	1	34	13
California	8,565	407	26	22	152	207
Colorado	396	56	3	7	12	34
Connecticut	370	41	3	3	8	27
D.C.	8	1				1
Delaware	102	8	2		2	4
Florida	1,168	238	31		189	18
Georgia	568	101	14	8	24	55
Guam	275	5		1	1	3
Hawaii	394	17	3		12	2
Iowa	213	47	12	4	15	16
Idaho	248	21	6	2	11	2
Illinois	749	133	26	2	58	47
Indiana	400	86	19	1	45	21
Kansas	247	41	10	2	13	16
Kentucky	344	77	2	7	6	62
Louisiana	324	76	23	4	26	23
Massachusetts	1,135	132	10	2	58	62
Maryland	175	36	7	1	11	17
Maine	87	19	4	2	2	11
Michigan	371	71	21	3	17	30
Minnesota	434	85	16		59	10
Missouri	457	68	17	3	26	22
N. Mariana Is.	137	3	1	1	1	
Mississippi	527	72	30		40	2
Montana	126	13	4	2	2	5
North Carolina	1,042	115	12	10	26	67
North Dakota	41	13	3	1	3	6
Nebraska	230	20	8		10	2
New Hampshire	135	21	4	2	4	11
New Jersey	1,051	128	14	2	74	38
New Mexico	362	32	6	2	19	5
Nevada	71	11	3	1	1	6
New York	2,325	160	21	8	50	81
Ohio	548	153	24	4	61	64
Oklahoma	317	52	7	8	8	29
Oregon	350	55	6	5	14	30
Pennsylvania	1,260	165	21	16	22	106
Puerto Rico	717	85	4	5	20	56
Rhode Island	109	13	2		4	7
South Carolina	292	59	5	6	10	38
South Dakota	103	17	3	1	5	8
Tennessee	542	105	2	12	17	74
Texas	1,750	266	61	10	66	129
Utah	466	52	4	3	13	32
Virginia	298	58	13	3	1	41
Virgin Islands	28	4		2		2
Vermont	40	10	3	1		6
Washington	684	82	14	3	41	24
Wisconsin	552	76	21		37	18
West Virginia	152	35		10	3	22
Wyoming	69	11	1	2	1	7
Tribe - 05	2	1	1			
Tribe - 06	2	1	1			
Tribe - 07	4	1		1		
Tribe - 08	6	2	1	1		
Tribe - 09	16	3	1	1		1
Total	33,800	3,873	590	207	1,380	1,696

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Table G9.c. Terbacil - Total Population-Served by State (UCMR 1 March 2006 Data)

State [1,2]	Total Number of PWSs	Total Population Served	Pop. Served by Small Systems		Pop. Served by Large Systems	
			GW	SW	GW	SW
Alaska	9	239,991	3,092	362	58,600	177,937
Alabama	98	3,966,808	67,068	7,389	703,125	3,189,226
Arkansas	47	1,396,235	35,209	18,986	334,297	1,007,743
Arizona	59	4,246,932	39,692	1,606	1,561,412	2,644,222
California	407	33,137,788	85,318	74,071	7,011,747	25,966,652
Colorado	56	4,085,452	12,175	25,252	294,405	3,753,620
Connecticut	41	2,390,100	1,309	18,525	121,731	2,248,535
D.C.	1	927,055				927,055
Delaware	8	536,260	6,800		53,330	476,130
Florida	238	15,323,786	117,516		12,383,938	2,822,332
Georgia	101	6,750,245	28,636	33,086	715,555	5,972,968
Guam	5	105,219		5,504	12,500	87,215
Hawaii	17	1,110,726	15,462		1,010,064	85,200
Iowa	47	1,686,720	19,916	6,789	515,056	1,144,959
Idaho	21	580,914	35,100	3,197	342,565	200,052
Illinois	133	7,645,947	106,661	10,490	1,536,074	5,992,722
Indiana	86	3,539,721	104,078	8,912	1,195,492	2,231,239
Kansas	41	1,739,325	27,481	11,145	299,868	1,400,831
Kentucky	77	3,499,097	7,622	32,797	179,924	3,278,754
Louisiana	76	2,685,825	75,303	13,120	807,125	1,790,277
Massachusetts	132	6,456,374	50,393	12,900	1,392,955	5,000,126
Maryland	36	4,676,636	12,301	6,200	522,337	4,135,798
Maine	19	348,285	2,955	5,155	27,040	313,135
Michigan	71	5,492,931	57,873	20,824	624,720	4,789,514
Minnesota	85	3,005,782	58,334		1,695,267	1,252,181
Missouri	68	3,619,103	38,276	13,471	767,067	2,800,289
N. Mariana Is.	3	68,836	2,631	3,509	62,696	
Mississippi	72	1,273,562	78,999		872,095	322,468
Montana	13	350,315	10,314	5,202	85,782	249,017
North Carolina	115	5,093,736	47,141	51,698	663,985	4,330,912
North Dakota	13	320,270	7,416	203	67,034	245,617
Nebraska	20	965,769	23,535		410,925	531,309
New Hampshire	21	494,401	10,620	5,630	76,400	401,751
New Jersey	128	8,122,662	60,020	16,300	2,086,167	5,960,175
New Mexico	32	1,112,569	6,625	570	948,281	157,093
Nevada	11	1,625,791	5,393	463	17,000	1,602,935
New York	160	19,956,351	45,407	48,624	3,493,019	16,369,301
Ohio	153	8,541,989	104,131	18,988	1,683,901	6,734,969
Oklahoma	52	2,221,224	23,784	43,255	166,635	1,987,550
Oregon	55	2,515,862	12,378	19,515	390,600	2,093,369
Pennsylvania	165	9,008,128	42,012	50,653	442,445	8,473,018
Puerto Rico	85	4,782,110	24,631	12,020	445,558	4,299,901
Rhode Island	13	824,052	4,740		94,000	725,312
South Carolina	59	2,669,268	14,485	35,619	213,706	2,405,458
South Dakota	17	353,547	9,780	376	72,760	270,631
Tennessee	105	4,269,873	2,533	70,682	1,078,175	3,118,483
Texas	266	16,732,165	228,336	22,737	2,851,292	13,629,800
Utah	52	2,011,035	16,417	16,285	351,194	1,627,139
Virginia	58	5,137,941	13,849	9,079	40,715	5,074,298
Virgin Islands	4	64,400		400		64,000
Vermont	10	220,439	2,149	9,020		209,270
Washington	82	4,490,251	38,029	3,807	1,516,949	2,931,466
Wisconsin	76	2,769,896	88,774		1,022,486	1,658,636
West Virginia	35	781,825		34,761	60,546	686,518
Wyoming	11	245,695	1,100	580	24,999	219,016
Tribe - 05	1	191	191			
Tribe - 06	1	2,300	2,300			
Tribe - 07	1	498		498		
Tribe - 08	2	825	325	500		
Tribe - 09	3	31,444	3,200	10,000		18,244
Total	3,873	226,252,477	1,939,815	820,755	53,405,539	170,086,368

[1] The UCMR data are not representative at the state-level.

[2] States are arranged alphabetically based on their 2-digit State abbreviation.

Appendix H. Sample-Point Level Occurrence Measures

Table H1.a. DCPA Degradates - Sample-Point-Level Analysis - Summary of all threshold evaluations (UCMR 1 March 2006 data)

The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. The numbers presented below are the sum of the small system national extrapolation estimates and the actual large system census results.

Threshold	Standard Stage 1 Analysis[1]				At least 2 Detects at 1 SP[2]				At least 1 Detect at 2 SPs[3]				Populations Proportional to % SP detects[4]			
	Number		Percentage		Number		Percentage		Number		Percentage		Number		Percentage	
	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	SPs	Pop	SPs	Pop
HRL (70 ug/L)	373	113,000	0.03%	0.0002%	373	113,000	0.03%	0.0002%	0	0	0%	0%	439	113,000	0.01%	0.0002%
1/2 HRL (35 ug/L)	374	851,337	0.05%	0.33%	373	113,000	0.03%	0.0002%	0	0	0%	0%	446	400,131	0.05%	0.13%
MRL (1 ug/L)	849	12,387,436	4.57%	5.05%	660	8,738,401	2.92%	3.58%	174	7,698,891	2.22%	3.28%	1,314	3,646,916	3.00%	1.37%

[1] Occurrence findings based on systems and population-served by systems, with at least one analytical detection of DCPA mono/di-acid degradates≥ MRL, > 1/2 HRL, or > HRL. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[2] Occurrence findings based on systems, and population-served by systems, with at least two detections (≥ MRL) or two detections above a threshold (>1/2 HRL or HRL) at a single sample point (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[3] Occurrence findings based on systems, and population-served by systems, with at least one detection (≥ MRL) or one detection above a threshold (> 1/2 HRL or HRL) at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[4] The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary). Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.

Table H1.b. DCPA Degradates - Sample-Point-Level Analysis - Detections greater than HRL of 70 µg/L

Water Type	System Size by Population Served	Total Number				Standard Stage 1 Analysis					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.17%	0.03%	373	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.13%	0.02%	373	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	1	500	0.03%	0.0002%	373	113,000

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served ≤ 10,000) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems and population-served by systems, with at least one analytical detection of DCPA mono/di-acid degradates greater than the threshold (> 70 µg/L). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.b. DCPA Degradates - Sample-Point-Level Analysis - Detections greater than HRL of 70 µg/L

Water Type	System Size by Population Served	Total Number				At least 2 Detects at 1 SP					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.17%	0.03%	373	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.13%	0.02%	373	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	1	500	0.03%	0.0002%	373	113,000

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served ≤ 10,000) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least two detections above the threshold at a single sample point (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.b. DCPA Degradates - Sample-Point-Level Analysis - Detections greater than HRL of 70 µg/L

Water Type	System Size by Population Served	Total Number				At least 1 Detect at 2 SPs					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	0	0	0.00%	0.00%	0	0
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	0	0	0.00%	0.00%	0	0
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	0	0	0.00%	0.00%	0	0

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served ≤ 10,000) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least one detection above the threshold at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.b. DCPA Degradates - Sample-Point-Level Analysis - Detections greater than HRL of 70 µg/L

Water Type	System Size by Population Served	Total Number				Populations Proportional to % SP detects					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	SPs	Population	SPs	Population	SPs	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.76%	1.81%	439	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.08%	0.03%	439	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.07%	0.02%	439	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	1	500	0.01%	0.00%	439	113,000

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served $\leq$ 10,000) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.

Table H1.c. DCPA Degradates - Sample-Point-Level Analysis -

Detections greater than 1/2 HRL of 35 ug/L

Water Type	System Size by Population Served	Total Number				Standard Stage 1 Analysis					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.17%	0.03%	373	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.13%	0.02%	373	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905			1	738,337	0.20%	0.55%		
	Total	1,690	168,728,855			1	738,337	0.06%	0.44%		
All Large Systems		3,079	222,266,208			1	738,337	0.03%	0.33%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	2	738,837	0.05%	0.33%	374	851,337

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems and population-served by systems, with at least one analytical detection of DCPA mono/di-acid degradates greater than the threshold (> 35 µg/L). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.c. DCPA Degradates - Sample-Point-Level Analysis -

Detections greater than 1/2 HRL of 35 ug/L

Water Type	System Size by Population Served	Total Number				At least 2 Detects at 1 SP					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.17%	0.03%	373	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.13%	0.02%	373	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	1	500	0.03%	0.00022%	373	113,000

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least two detections above the threshold at a single sample point (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.c. DCPA Degradates - Sample-Point-Level Analysis -

Detections greater than 1/2 HRL of 35 ug/L

Water Type	System Size by Population Served	Total Number				At least 1 Detect at 2 SPs					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	0	0	0.00%	0.00%	0	0
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	0	0	0.00%	0.00%	0	0
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0.00%	0.00%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905								
	Total	1,690	168,728,855			0	0	0.00%	0.00%		
All Large Systems		3,079	222,266,208			0	0	0.00%	0.00%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	0	0	0.00%	0.00%	0	0

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least one detection above the threshold at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.c. DCPA Degradates - Sample-Point-Level Analysis -

Detections greater than 1/2 HRL of 35 ug/L

Water Type	System Size by Population Served	Total Number				Populations Proportional to % SP detects					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	SPs	Population	SPs	Population	SPs	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.76%	1.81%	439	113,000
	501 - 3,300	245	441,499	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	590	1,939,815	56,072	36,224,336	1	500	0.08%	0.03%	439	113,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	1	500	0.07%	0.02%	439	113,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195								
	> 50,000	190	26,476,158								
	Total	1,389	53,537,353			0	0	0%	0%		
Surface Water	10,001 - 50,000	1,183	33,338,950								
	> 50,000	507	135,389,905			7	287,131	0.25%	0.21%		
	Total	1,690	168,728,855			7	287,131	0.13%	0.17%		
All Large Systems		3,079	222,266,208			7	287,131	0.05%	0.13%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	8	287,631	0.05%	0.13%	446	400,131

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.

Table H1.d. DCPA Degradates - Sample-Point-Level Analysis - Detections (≥ MRL of 1 ug/L)

Water Type	System Size by Population Served	Total Number				Standard Stage 1 Analysis					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332	3	4,692	1.22%	1.06%	149	166,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656	12	81,241	5.13%	5.52%	130	795,000
	Total	590	1,939,815	56,072	36,224,336	16	86,433	2.71%	4.46%	652	1,074,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107	1	1,500	2.22%	1.64%	37	44,000
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	1	1,500	0.48%	0.18%	37	44,000
All Small Systems		797	2,760,570	60,414	45,414,590	17	87,933	2.13%	3.19%	689	1,118,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195			87	2,095,370	7.26%	7.74%		
	> 50,000	190	26,476,158			22	3,987,609	11.58%	15.06%		
	Total	1,389	53,537,353			109	6,082,979	7.85%	11.36%		
Surface Water	10,001 - 50,000	1,183	33,338,950			34	1,136,909	2.87%	3.41%		
	> 50,000	507	135,389,905			17	4,049,548	3.35%	2.99%		
	Total	1,690	168,728,855			51	5,186,457	3.02%	3.07%		
All Large Systems		3,079	222,266,208			160	11,269,436	5.20%	5.07%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	177	11,357,369	4.57%	5.05%	849	12,387,436

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems and population-served by systems, with at least one analytical detection of DCPA mono/di-acid degradates. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.d. DCPA Degradates - Sample-Point-Level Analysis - Detections (≥ MRL of 1 ug/L)

Water Type	System Size by Population Served	Total Number				At least 2 Detects at 1 SP					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.90%	1.81%	373	113,000
	501 - 3,300	245	441,499	12,128	15,602,332	2	2,997	0.82%	0.68%	99	106,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656	8	51,897	3.42%	3.53%	86	508,000
	Total	590	1,939,815	56,072	36,224,336	11	55,394	1.86%	2.86%	558	727,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	11	55,394	1.38%	2.01%	558	727,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195			51	1,420,280	4.25%	5.25%		
	> 50,000	190	26,476,158			15	2,942,386	7.89%	11.11%		
	Total	1,389	53,537,353			66	4,362,666	4.75%	8.15%		
Surface Water	10,001 - 50,000	1,183	33,338,950			25	850,097	2.11%	2.55%		
	> 50,000	507	135,389,905			11	2,798,638	2.17%	2.07%		
	Total	1,690	168,728,855			36	3,648,735	2.13%	2.16%		
All Large Systems		3,079	222,266,208			102	8,011,401	3.31%	3.60%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	113	8,066,795	2.92%	3.58%	660	8,738,401

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least two detections at a single sample point (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.d. DCPA Degradates - Sample-Point-Level Analysis - Detections (≥ MRL of 1 ug/L)

Water Type	System Size by Population Served	Total Number				At least 1 Detect at 2 SPs					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	245	441,499	12,128	15,602,332	1	2,297	0.41%	0.52%	50	81,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656	4	27,084	1.71%	1.84%	43	265,000
	Total	590	1,939,815	56,072	36,224,336	5	29,381	0.85%	1.51%	93	346,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		797	2,760,570	60,414	45,414,590	5	29,381	0.63%	1.06%	93	346,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195			42	1,162,085	3.50%	4.29%		
	> 50,000	190	26,476,158			14	2,768,576	7.37%	10.46%		
	Total	1,389	53,537,353			56	3,930,661	4.03%	7.34%		
Surface Water	10,001 - 50,000	1,183	33,338,950			15	566,515	1.27%	1.70%		
	> 50,000	507	135,389,905			10	2,855,715	1.97%	2.11%		
	Total	1,690	168,728,855			25	3,422,230	1.48%	2.03%		
All Large Systems		3,079	222,266,208			81	7,352,891	2.63%	3.31%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	86	7,382,272	2.22%	3.28%	174	7,698,891

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least one detection at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H1.d. DCPA Degradates - Sample-Point-Level Analysis - Detections (≥ MRL of 1 ug/L)

Water Type	System Size by Population Served	Total Number				Populations Proportional to % SP detects					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	SPs	Population	SPs	Population	SPs	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348	1	500	0.76%	1.81%	439	113,000
	501 - 3,300	245	441,499	12,128	15,602,332	4	3,314	0.89%	0.75%	194	117,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656	18	33,108	2.86%	2.25%	210	324,000
	Total	590	1,939,815	56,072	36,224,336	23	36,922	1.90%	1.90%	843	554,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107	1	1,500	2.13%	1.64%	46	44,000
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	1	1,500	0.41%	0.18%	46	44,000
All Small Systems		797	2,760,570	60,414	45,414,590	24	38,422	1.65%	1.39%	889	598,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,199	27,061,195			172	892,141	3.16%	3.30%		
	> 50,000	190	26,476,158			128	572,747	4.57%	2.16%		
	Total	1,389	53,537,353			300	1,464,888	3.64%	2.74%		
Surface Water	10,001 - 50,000	1,183	33,338,950			80	661,586	3.20%	1.98%		
	> 50,000	507	135,389,905			45	922,442	1.62%	0.68%		
	Total	1,690	168,728,855			125	1,584,028	2.37%	0.94%		
All Large Systems		3,079	222,266,208			425	3,048,916	3.14%	1.37%		
Total Water Systems[1]		3,876	225,026,778	63,493	267,680,798	449	3,087,338	3.00%	1.37%	1,314	3,646,916

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.

Table H2.a. MTBE - Sample-Point-Level Analysis - Summary of all threshold evaluations (UCMR 1 March 2006 data)

The UCMR small water systems (population served ≤ 10,000) are a statistical, representative sample of all national small systems while the UCMR large water systems (population served > 10,000) represent a census of all large systems. The numbers presented below are the sum of the small system national extrapolation estimates and the actual large system census results.

Threshold	Standard Stage 1 Analysis[1]				At least 2 Detects at 1 SP[2]				At least 1 Detect at 2 SPs[3]				Populations Proportional to % SP detects[4]			
	Number		Percentage		Number		Percentage		Number		Percentage		Number		Percentage	
	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	Sys	Pop	SPs	Pop	SPs	Pop
MRL (5 ug/L)	165	896,483	0.49%	0.33%	4	96,739	0.10%	0.04%	3	99,444	0.08%	0.04%	166	198,640	0.15%	0.05%

[1] Occurrence findings based on systems and population-served by systems, with at least one analytical detection of MTBE. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[2] Occurrence findings based on systems, and population-served by systems, with at least two detections at a single sample point (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[3] Occurrence findings based on systems, and population-served by systems, with at least one detection at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations in 4 below).

[4] The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary). Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.

Table H2.b. MTBE - Sample-Point -Level Analysis - detections (≥ MRL of 5 ug/L)

Water Type	System Size by Population Served	Total Number				Standard Stage 1 Analysis					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	244	439,011	12,128	15,602,332	3	4,150	1.23%	0.95%	149	147,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	589	1,937,327	56,072	36,224,336	3	4,150	0.51%	0.21%	149	147,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		796	2,758,082	60,414	45,414,590	3	4,150	0.38%	0.15%	149	147,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,192	26,911,853			9	179,894	0.76%	0.67%		
	> 50,000	189	26,361,273			3	241,292	1.59%	0.92%		
	Total	1,381	53,273,126			12	421,186	0.87%	0.79%		
Surface Water	10,001 - 50,000	1,185	33,277,623			2	55,388	0.17%	0.17%		
	> 50,000	509	136,681,205			2	272,909	0.39%	0.20%		
	Total	1,694	169,958,828			4	328,297	0.24%	0.19%		
All Large Systems		3,075	223,231,954			16	749,483	0.52%	0.34%		
Total Water Systems[1]		3,871	225,990,036	63,489	268,646,544	19	753,633	0.49%	0.33%	165	896,483

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems and population-served by systems, with at least one analytical detection of MTBE. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H2.b. MTBE - Sample-Point -Level Analysis - detections (≥ MRL of 5 ug/L)

Water Type	System Size by Population Served	Total Number				At least 2 Detects at 1 SP					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	244	439,011	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	589	1,937,327	56,072	36,224,336	0	0	0.00%	0.00%	0	0
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		796	2,758,082	60,414	45,414,590	0	0	0.00%	0.00%	0	0
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,192	26,911,853			3	74,351	0.25%	0.28%		
	> 50,000	189	26,361,273								
	Total	1,381	53,273,126			3	74,351	0.22%	0.14%		
Surface Water	10,001 - 50,000	1,185	33,277,623			1	22,388	0.08%	0.07%		
	> 50,000	509	136,681,205								
	Total	1,694	169,958,828			1	22,388	0.06%	0.01%		
All Large Systems		3,075	223,231,954			4	96,739	0.13%	0.04%		
Total Water Systems[1]		3,871	225,990,036	63,489	268,646,544	4	96,739	0.10%	0.04%	4	96,739

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least two detections at a single sample point to the distribution system (SP). For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H2.b. MTBE - Sample-Point -Level Analysis - detections (≥ MRL of 5 ug/L)

Water Type	System Size by Population Served	Total Number				At least 1 Detect at 2 SPs					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	Systems	Population	Systems	Population	Systems	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	244	439,011	12,128	15,602,332						
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	589	1,937,327	56,072	36,224,336	0	0	0.00%	0.00%	0	0
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		796	2,758,082	60,414	45,414,590	0	0	0.00%	0.00%	0	0
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,192	26,911,853			2	30,245	0.17%	0.11%		
	> 50,000	189	26,361,273								
	Total	1,381	53,273,126			2	30,245	0.14%	0.06%		
Surface Water	10,001 - 50,000	1,185	33,277,623								
	> 50,000	509	136,681,205			1	69,199	0.20%	0.05%		
	Total	1,694	169,958,828			1	69,199	0.06%	0.04%		
All Large Systems		3,075	223,231,954			3	99,444	0.10%	0.04%		
Total Water Systems[1]		3,871	225,990,036	63,489	268,646,544	3	99,444	0.08%	0.04%	3	99,444

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

Occurrence findings based on systems, and population-served by systems, with at least one detection at each of two or more SPs in the system. For aggregate population-served values, for each system that had a detect the full population-served value of that system was added to the aggregate (in contrast to proportional populations).

Table H2.b. MTBE - Sample-Point -Level Analysis - detections (≥ MRL of 5 ug/L)

Water Type	System Size by Population Served	Total Number				Populations Proportional to % SP detects					
		UCMR		National Inventory		UCMR		Percentage		National Extrapolation	
		Systems	Population	Systems	Population	SPs	Population	SPs	Population	SPs	Population
Small Systems (Statistical sample)											
Ground Water	< 500	111	27,599	41,415	6,231,348						
	501 - 3,300	244	439,011	12,128	15,602,332	3	2,450	0.67%	0.56%	147	87,000
	3,301 - 10,000	234	1,470,717	2,529	14,390,656						
	Total	589	1,937,327	56,072	36,224,336	3	2,450	0.25%	0.13%	147	87,000
Surface Water	< 500	52	16,662	1,639	306,256						
	501 - 3,300	45	91,723	1,659	2,674,107						
	3,301 - 10,000	110	712,370	1,044	6,209,891						
	Total	207	820,755	4,342	9,190,254	0	0	0.00%	0.00%	0	0
All Small Systems		796	2,758,082	60,414	45,414,590	3	2,450	0.21%	0.09%	147	87,000
Large Systems (Census)											
Ground Water	10,001 - 50,000	1,192	26,911,853			11	28,746	0.20%	0.11%		
	> 50,000	189	26,361,273			3	48,390	0.11%	0.18%		
	Total	1,381	53,273,126			14	77,136	0.17%	0.14%		
Surface Water	10,001 - 50,000	1,185	33,277,623			2	27,102	0.08%	0.08%		
	> 50,000	509	136,681,205			3	7,402	0.11%	0.01%		
	Total	1,694	169,958,828			5	34,504	0.09%	0.02%		
All Large Systems		3,075	223,231,954			19	111,640	0.14%	0.05%		
Total Water Systems[1]		3,871	225,990,036	63,489	268,646,544	22	114,090	0.15%	0.05%	166	198,640

Analyses based on UCMR 1 data as of March 2006, and represent recent adjustments to the population-served values for large systems that minimize population double-counting in consecutive systems.

Note that small water systems (population served < 10,001) conducting UCMR monitoring represent a statistically representative sub-sample of all small systems, while the UCMR large water systems (population served > 10,000) represent a census of all large systems. Comparing and totaling raw data between small and large systems may not accurately represent national occurrence.

The extrapolated number of small system sample points with a contaminant detection was estimated by multiplying the percentage of UCMR 1 small system sample points with a contaminant detection by the total number of sample points nationally. The national number of small system sample points was estimated by multiplying the average number of sample points for a system water type category by the total number of systems nationally in that category. The large system sample point numbers presented in this table are direct counts of the UCMR 1 large system data (no extrapolations are necessary).

Population-served values for each system were adjusted based on the distribution of detections among SPs of a system. For each system, the gross population-served was multiplied by the proportion of total SPs with detects. These adjusted sums were then aggregated to create the summary statistics presented above. One simplifying assumption is that a system's entire population-served is uniformly distributed across all the system's SPs.