OHIO's PUBLIC WATER SYSTEMS

ANNUAL COMPLIANCE REPORT

For

CALENDAR YEAR 2000

Ohio Environmental Protection Agency
Division of Drinking and Ground Waters
July 1, 2001

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Introduction

The 1996 Amendments to the Safe Drinking Water Act require each State to prepare an Annual Compliance Report summarizing violations incurred by Public Water Systems. The Annual Compliance Report is to be compiled by the State and submitted to U.S. EPA and made available to the public. This report summarizes compliance rates and the number and types of violations generated as a result of various public water systems failing to meet certain Safe Drinking Water Act requirements for calendar year 2000.

Ohio's 2000 Annual Compliance Report contains an overview of the Public Water System Supervision Program in Ohio; provides summary information on the number, types and population served for public water systems; explains the requirements of the annual compliance report; defines the primary categories for which violation information are summarized; a summary table of the number and types of violations; an analysis of public water system compliance with the regulations; and a list of public water system violations for the maximum contaminant level and treatment technique categories.

The Drinking Water Program: An Overview

U.S. EPA established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 and 1996 Amendments, U.S. EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs). For some regulations, U.S. EPA establishes treatment techniques in lieu of an MCL to control unacceptable levels of contaminants in water. The Agency also regulates how often public water systems (PWSs) monitor their water for contaminants and report the monitoring results to the States or U.S. EPA. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting (M/R) requirements. However, the M/R requirements vary dependent on which contaminant is being evaluated. In addition, the regulations require public water systems to monitor for unregulated contaminants to provide data for future regulatory development. Finally, public water systems are required to notify the public when they have violated these regulations. The 1986 Amendments to the SDWA require public notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the public water system is undertaking to correct the violation and the possibility for the need to obtain alternative water supplies during the violation.

The SDWA allows States to seek U.S. EPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called primacy. To receive primacy, States must meet certain requirements set forth in the SDWA and the regulations, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and provide a demonstration that they can enforce the program requirements. *Ohio is a primacy state*.

Regulated Public Water Systems in Ohio

In Ohio, a public water system (PWS) is defined as a system that provides piped water for human consumption to at least 15 service connections or serves an average of at least 25 people for at least 60 days each year. There are three types of public water systems. Public water systems can be community (such as towns), non-transient non-community (such as schools or factories), or transient non-community systems (such as rest stops or parks). In addition, Ohio regulates the drinking water systems associated with agricultural migrant labor camps as defined by the Ohio Department of Agriculture even though they may not meet the minimum number of people or service connections. For this report when the acronym "PWS" is used, it means systems of all types unless specified in greater detail. In Ohio, 5,757 public water systems serve approximately 10.7 million people daily with an average production of approximately 1.7 billion gallons of water per day. This yields an average water use of 154 gallons per person per day. Table 1 summarizes the total number and percentage of public water systems per type with the corresponding total population served daily. As you can see in this table, the CWS only represent 24 percent of the number of systems in the state, but serve almost 93 percent of the population.

The total number and percentage of PWS by population categories are presented in Table 2. An interesting note from this table is that 26 PWS, less than 1 percent of the total systems in the state, serve over half the entire states population.

Table 1. Public Water System Summary by Category Type

PWS Category Type	Number of PWSs per Category	Percentage of each PWS Type	Total Population Served Daily per Category	Percentage of Total Population for each PWS Type
Community (CWS)	1,379	24%	9,902,816	92.7%
Non-Transient Non-Community (NTNC)	1,065	18.5%	271,011	2.5%
Transient Non-Community (TNC)	3,313	57.5%	511,035	4.8%
Total	**5,757**	**100%**	**10,684,862**	**100%**

Table 2. Public Water System Summary by Population Categories

PWS Populations Categories	Number of PWS per Category	Percentage of the Total PWS for each Category	Total Population Served Daily per Category	Percentage of the Total Population for each Category
Population: 25 - 500	4,742	82.3%	627,984	5.9%
Population: 501 - 3,300	716	12.4%	891,341	8.3%
Population: 3,301 - 10,000	149	2.6%	925,875	8.7%
Population: 10,001 - 50,000	124	2.2%	2,685,848	25.1%
Population: Greater than 50,000	26	0.5%	5,553,814	52.0%
Total	**5,757**	**100%**	**10,684,862**	**100%**

Annual State PWS Compliance Report

Ohio EPA submits data to U.S. EPA's Safe Drinking Water Information System (SDWIS/FED) on a quarterly basis. The data includes PWS inventory statistics, the incidence of Maximum Contaminant Level (MCL), major monitoring, treatment technique violations, and the enforcement actions taken against violators. This Annual Compliance Report provides a total annual representation of the number of violations for each of the four categories listed in section 1414(c)(3)(A)(i) of the Safe Drinking Water Act re-authorization, as well as consumer notification requirements. This report will analyze violation and compliance information for the 2000 calendar year using five categories: MCLs, treatment techniques, significant monitoring violations, consumer notifications, and variances and exemptions.

1. *Maximum Contaminant Level*
   Under the SDWA, U.S. EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as MCLs.

2. *Treatment Techniques*
   For some regulations, the EPA establishes treatment techniques (TTs) in lieu of an MCL to control unacceptable levels of certain contaminants. For example, treatment techniques have been established for viruses, bacteria, and turbidity.

3. *Monitoring*

A PWS is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. If a PWS fails to have its water tested as required, then a monitoring violation occurs. A monitoring violation also includes failure to report test results correctly to the State.

Significant Monitoring Violations
For this report, significant monitoring violations are defined as any major monitoring violation that has occurred during the specified report interval. A major monitoring violation occurs when no samples were taken or no results are reported during a compliance period.

4. *Consumer Notification*
Every Community Water System is required to deliver to its customers a brief annual water quality report - a Consumer Confidence Report (CCR). This report is to include some educational material, and will provide information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations.

Significant Consumer Notification Violations
A significant public notification violation occurred if a community water system completely failed to provide its customers the required annual water quality report.

5. *Variances and Exemptions*
Variances and exemptions to specific requirements under the SDWA Amendments of 1996 may be granted under certain circumstances. If, due to the characteristics of the raw water sources reasonably available, a PWS cannot meet the MCL, the State can grant the PWS a variance from the applicable primary drinking water regulation on the condition that the system install the best available technology, treatment techniques, or other means which the Administrator finds are available (taking costs into account). *Ohio did not issue any variances or exemptions during the 2000 compliance year*.

Compliance Table Summary Analysis

A summary table of public water system compliance rates and violations for the 2000 calendar year is included in Appendix A. The information summarized in the table includes the total number of PWS required to monitor during the 2000 calendar year; total number of violations; total number of systems with a violation; and percent compliance achieved for a particular regulated contaminant in three different violation categories. These violation categories are MCL, TT and significant M/R (CCR notification violations have also been included under this heading). The regulatory contaminant categories include: organic contaminants; inorganic contaminants; radionuclide contaminants; total coliform bacteria regulations; surface water treatment regulations, lead and copper regulations, and CCR notifications.

Violation totals and compliance rates for each of the major contaminant group categories are presented in Table 3. Compliance rates are based on the total number of systems *required to* comply with each of the contaminant categories. For example, the 92.4% CCR compliance rate is based on 1,379 CWS required to send notifications with 105 systems failing to comply. Violation totals and compliance rates for the individual MCL contaminant group constituents have been broken out in Table 4. The total number of violations and total number of water systems with at least one violation is presented in Table 5.

Table 3. Violation Totals and Compliance Rates per Contaminant Group Category

Contaminant Category	MCL			Treatment Technique			Monitoring or CCR notifications		
	Violations	Systems in Violation	Comp. Rate	Violations	Systems in Violation	Comp. Rate	Violations	Systems in Violation	Comp. Rate
MCL Contaminant Group	34	23	99.6%				4,509	664	88.5
TCR	1,129	773	87%				1,918	1,291	77.6%
SWTR				225	44	82.7%	1	1	99.6%
Lead and Copper				0	0	100%	124	119	89.7%
CCR							105	105	92.4%

Table 4. Violation Totals and Compliance Rates for the Individual MCL Contaminant Group Constituents

Contaminant Category	MCL				Monitoring Requirements			
	Violations	Systems in Violation	No. of Systems Required to Monitor	Comp. Rate	Violations	Systems in Violation	No. of Systems Required to Monitor	Comp. Rate
VOCs	1	1	1568	99.9%	3,927	152	1568	90.3%
SOC	0	0	209	100.0%	67	26	209	87.6%
TTHM	0	0	147	100.0%	2	2	147	98.6%
IOCs	2	1	1,197*	99.9%	448	75	1,197*	93.7%
Nitrate and Nitrite	28	20	5679	99.6%	464	393	5679	93.1%
RADS	3	1	648	99.8%	19	16	648	97.5%

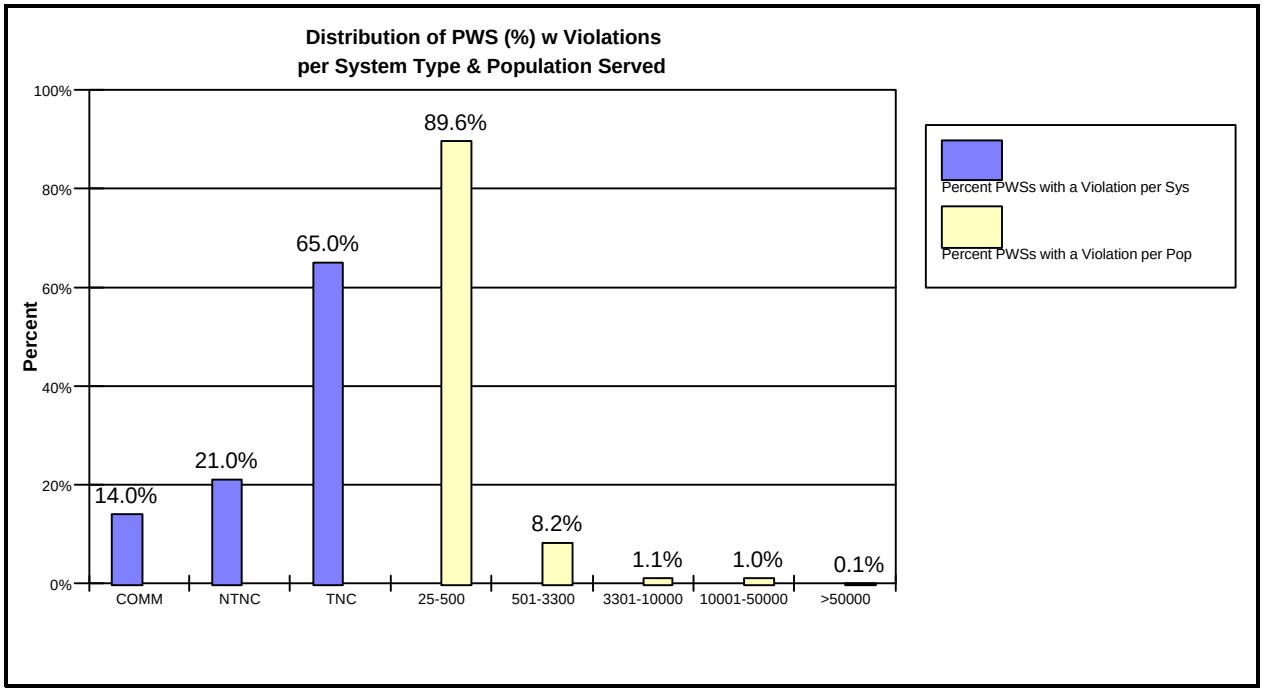
* The number of systems required to monitor for IOCs varies, but 1197 PWS were required to monitor for at least one of the inorganic chemicals. See Appendix A for details.

Table 5. State of Ohio Violation Totals for 2000

	State of Ohio Data
Total Number of Systems in Violation	2,045
Total Number of Violations	7,820

The overall compliance rate for all requirements, simply based on the number of systems having at least one violation during the year divided by the total number of systems, is 64.5 percent. This statistic is somewhat misleading since 51 percent of the water systems with violations incurred only one during 2000 and does not represent the severity of the violation. Tables 3 and 4 present compliance rates in a more meaningful way and give a better indication of overall PWS compliance for Ohio.

Figure 1.



As depicted in Figure 1, of all water systems with at least one violation, 65 percent were associated with TNC water systems, 20 percent with NTNC water systems and 14 percent with CWS. Nearly 90 percent of the PWSs having one or more violations were associated with a population served category of serving fewer than 500 people per day.

Over 83 percent of the violations in Ohio occur because public water systems fail to monitor and

report for various required contaminants in the period as specified on an individual system monitoring schedule provided by the Director of the Ohio EPA or as a result of follow-up or repeat sampling. Other M/R violations occur for insufficient number of samples taken during a particular compliance period. A detailed analysis of each contaminant group and violation category is presented below. When sufficient data was available, charts displaying the number of water systems with a violation per system type and population categories have been prepared and included in this report.

Organic Contaminants

The organic contaminants group summarized in the Compliance Table include: volatile organic chemicals (VOCs); a class of contaminants referred to as synthetic organic chemicals (SOCs) which primarily include pesticides; and total trihalomethanes (TTHMs).

VOCs are monitored by all community and NTNC PWSs (except purchased water systems) on one of three schedules: one sample quarterly for initial monitoring; one sample annually after initial monitoring; or one sample in 3 years (for ground water systems after meeting annual monitoring requirements). During 2000, 1,568 public water systems were required to sample at least once for VOCs. A significant difference to note between monitoring for VOCs and other contaminant groups is that every time a PWS samples for VOCs, they are required to have the sample analyzed for all 21 regulated VOC compounds using one analytical method which scans for all of the compounds. So, for each missed VOC sample, a PWS would have 21 violations for the regulated VOC compounds. This creates an artificially high number of violations for the VOC group as well as the total number of violations issued in Ohio. As required to be presented in this report, there are 3,927 individual VOC compound M/R violations. This really represents 187 VOC samples which were not collected. Only 152 of the 1,568 public water systems required to sample during 2000 failed to collect one or more samples which resulted in a M/R violation. Overall compliance for the VOC M/R is 90.3 percent. Approximately 63 percent of the VOC M/R violations were associated with NTNC systems. Of those public water systems with a VOC M/R violation, 83 percent were associated with water systems serving less than 500 people.

VOC Contaminant Group Highlights

- 1,568 public water systems required to collect VOC samples
- 99.9 percent compliance with all VOC MCLs
- 90.3 percent of the public water systems are in compliance for the VOC M/R category
- 187 VOC group M/R violations
- 83 percent of the VOC M/R violations occurred at PWS serving less than 500 people

SOCs are monitored by all community and NTNC PWS, except purchased systems. Monitoring

waivers are granted on the basis of the PWS not being susceptible (either by taking a sample or if the PWS hasn't had any nitrate detections greater than 2 mg/l) to contamination by the particular SOC being waived. The waivers are granted for a 3-year period and must be renewed when that period lapses or sampling would be required. Some PWS may be monitoring for SOCs more frequently due to detections in prior sampling events.

During the 2000 calendar year, 209 public water system were required to sample for the five most commonly used pesticides in Ohio: alachlor, atrazine, metholachlor, metribuzin and simazine. Only a few public water systems were required to monitor for up to 19 additional SOC compounds. All of the SOC violations incurred during the 2000 calendar year were related to M/R requirements. No public water systems incurred an SOC MCL during 2000. The overall M/R compliance rate for 2000 is 87.6 percent. Please note that in Appendix A - Compliance Table, monitoring/reporting compliance rates for the individual SOCs are higher (e.g. 92.3% for alachlor, atrazine and simazine). The overall compliance rate for SOC is down due to various systems not monitoring for individual contaminants. Also note that metholachlor and metribuzin are not included in Appendix A since they are not required to be reported to USEPA. However, there were no MCL violations and only 19 M/R violations for these chemicals.

SOC Contaminant Group Highlights

< 209 public water systems required to sample for SOCs
< 100 percent compliance with all SOC MCLs
< 87.6 percent of the public water systems were in compliance for all SOC M/R
< 77 percent of the M/R violations which occurred were for public water systems serving fewer than 500 people

Total Trihalomethanes (TTHMs), classified as disinfection by-products, are sampled in the distribution system by community PWSs that disinfect and have a population of 10,000 or greater. PWSs monitor for TTHMs on a quarterly basis. During the 2000 calendar year, 147 systems were required to perform TTHM monitoring. Overall compliance with TTHMs M/R is 98.6 percent. No public water system recorded MCL violations based on an running annual quarterly averages of TTHM exceeding 100 milligrams per liter.

TTHM Contaminant Group Highlights

< 147 community public water systems required to sample for TTHMs
< 100 percent compliance with the TTHM MCL
< 98.6 percent of the public water systems were in compliance for TTHMs M/R

Figures 2 and 3 show VOC, SOC and TTHM violation numbers by population categories and system types, respectively. For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 2000 and how many violations occurred for that contaminant, please refer to the Appendix A Compliance Table.

Figure 2.

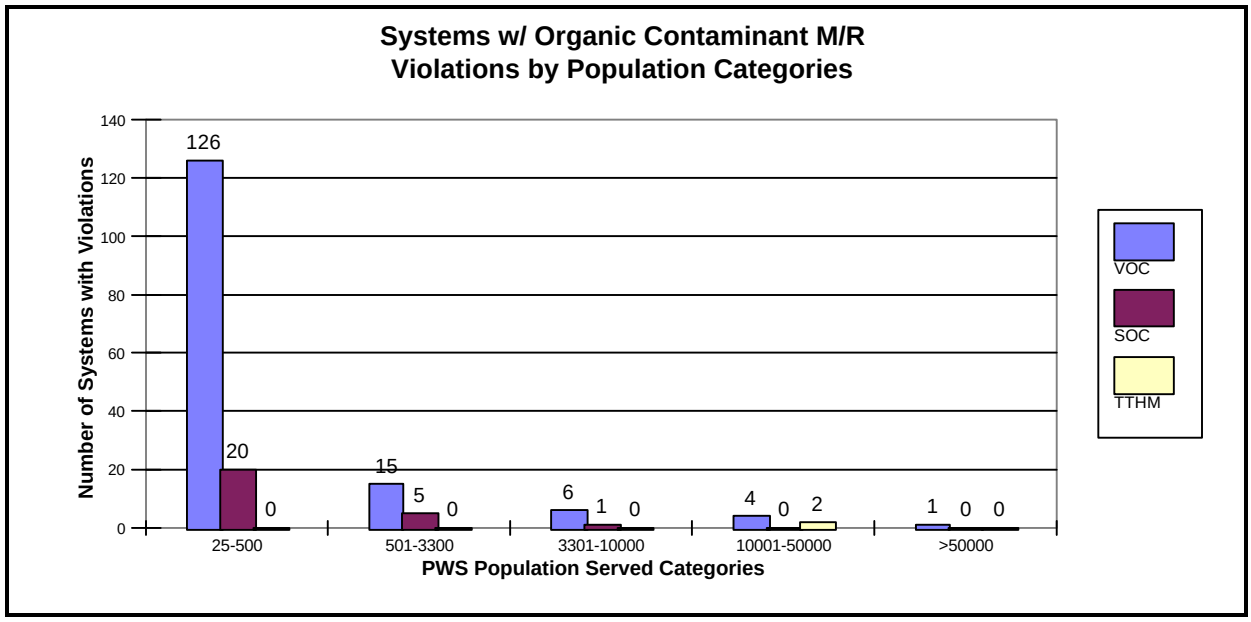
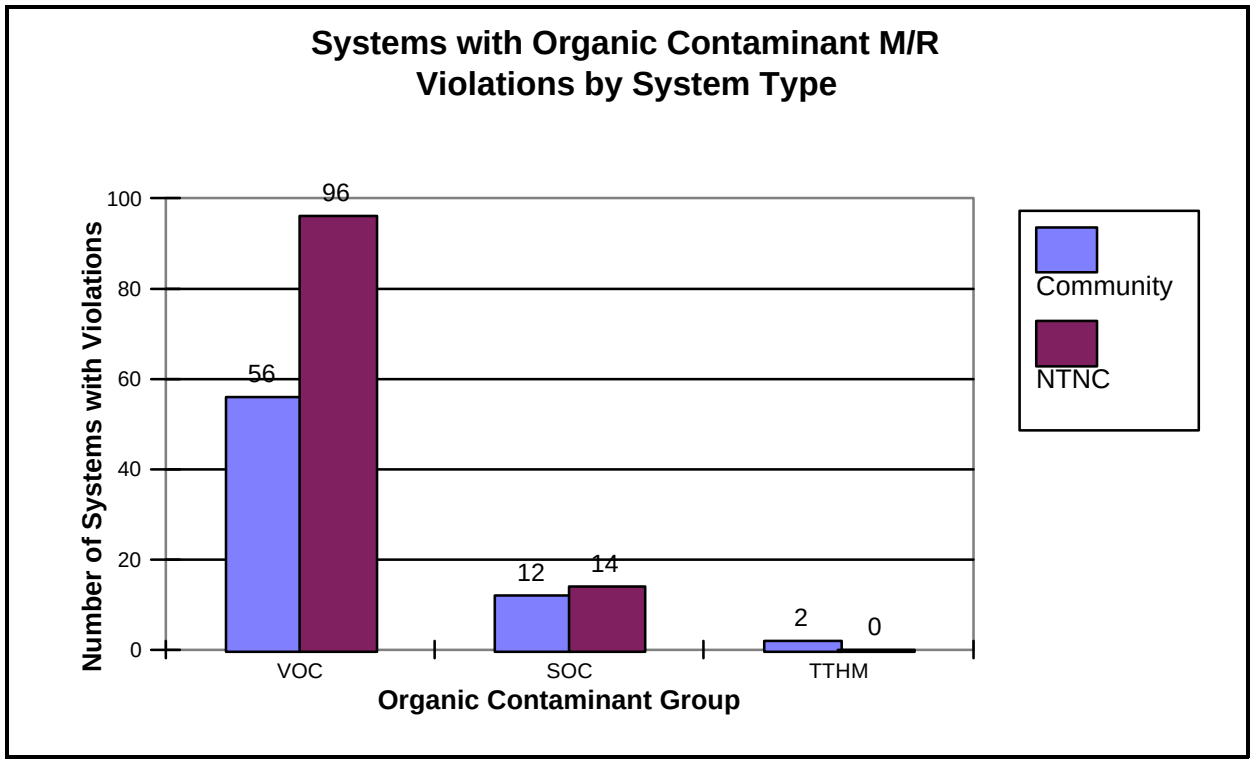


Figure 3.



Inorganic Contaminants

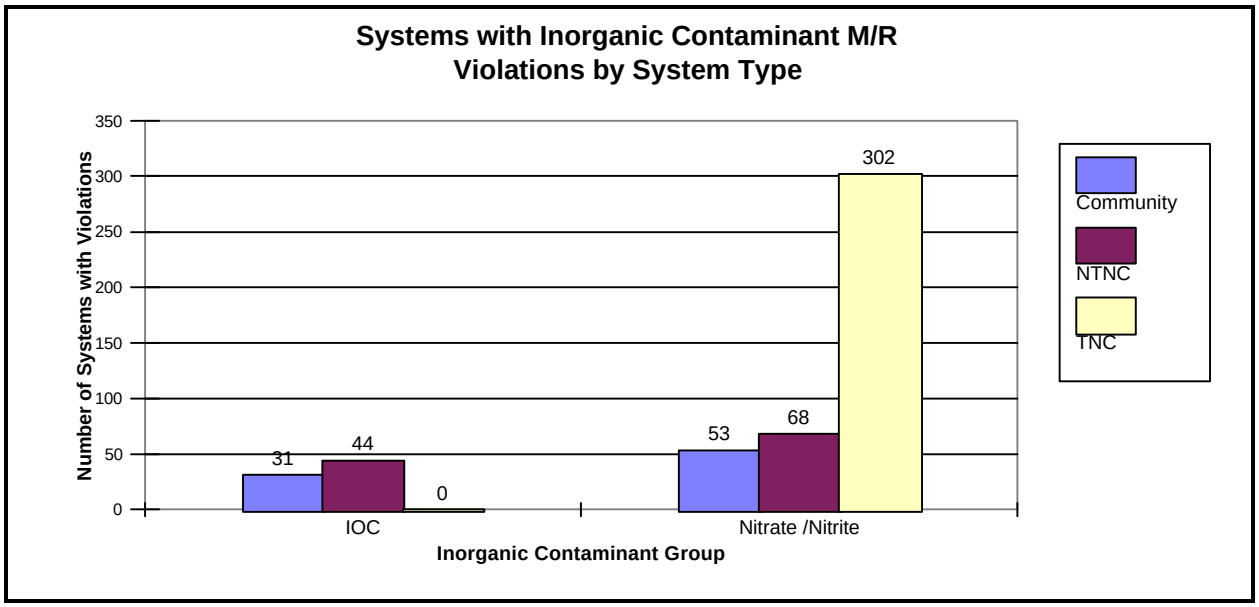
The inorganic contaminant group summarized in the Appendix A Compliance Table includes metals (e.g. chromium, cadmium, mercury, etc.) and non-metal contaminants (e.g. asbestos, cyanide, nitrate, etc.). Nitrate and nitrite are separated out as a group from the other inorganics (IOCs) for monitoring purposes. Both IOC and Nitrate/Nitrite violation numbers are shown in Figures 4 and 5, below.

IOCs are monitored by all community and NTNC PWS (except purchased systems). Most IOCs are monitored by surface water systems on an annual basis and by ground water systems once in 3 years. One exception is asbestos, which is monitored once in 9 years. IOC monitoring may also be waived for eligible systems. During the 2000 calendar year, 1,197 public water systems were required to sample for at least one of the 13 individual IOC compounds. The overall M/R compliance rate for the IOC contaminant group is 93.7 percent. Of the 75 water systems with an IOC M/R violation, approximately half were community and half were non-community water systems. However, 69 percent of all violations were associated with water systems serving less than 500 people.

IOC Contaminant Group Highlights

< 1,197 public water systems were required to sample for at least one IOCs
< 99.9 percent compliance with all IOC MCLs
< 93.7 percent of the public water systems were in compliance for IOC M/R
< 69 percent of the M/R violations were associated with public water systems serving fewer than 500 people

Figure 4.



Nitrate/nitrite are monitored by all community, NTNC, and TNC PWS (except purchased systems). Nitrate is monitored monthly by surface water systems and annually by ground water systems. Some ground water systems may be monitoring quarterly for nitrate based upon the levels reported in previous sampling. Nitrite is generally monitored once by each system. During the 2000 calendar year, 5,476 water systems were required to monitor for nitrate and 203 water systems were required to monitor for nitrite.

The overall compliance rate for nitrate/nitrite M/R during 2000 is 93.1 percent. Of the 393 water systems with a violation during the 2000 calendar year, 77 percent were issued to TNC water systems and approximately 90 percent were associated with systems serving fewer than 500 people.

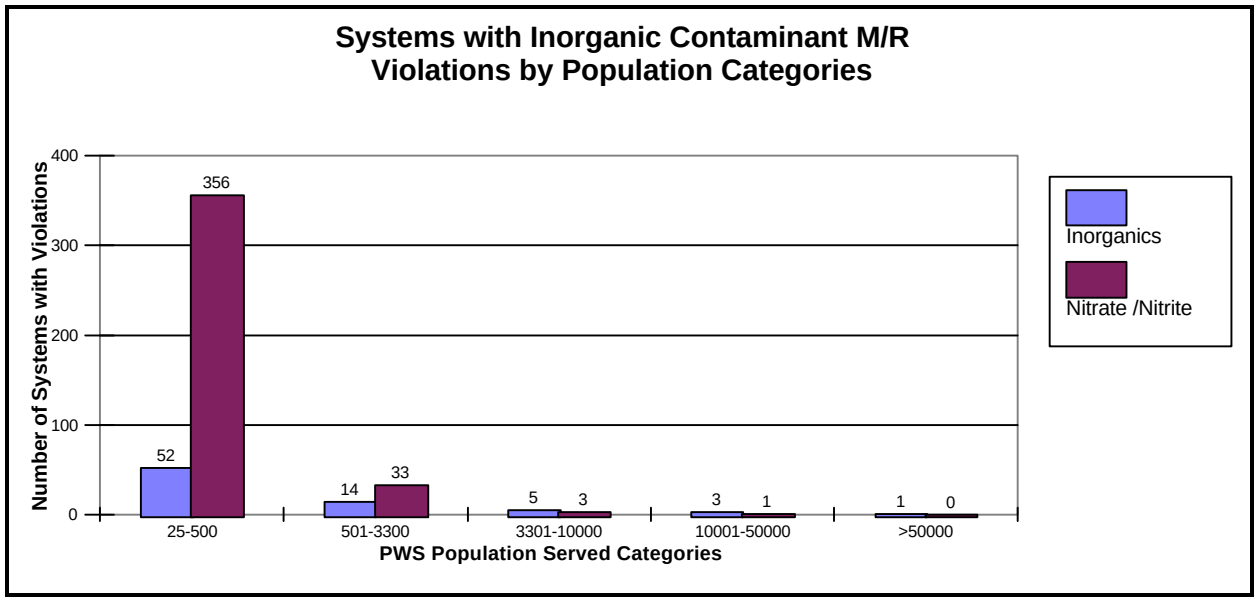
The highest number of MCL violations for any chemical parameter was associated with nitrate. During the 2000 calendar year, 28 nitrate MCL violations occurred at 20 water systems. These occurrences typically last for a short duration. It is important to note that 99.6 percent of all systems required to monitor did not have an MCL violation.

Nitrate/Nitrite Contaminant Group Highlights

- 5,679 public water systems were required to sample for nitrate and/or nitrite
- 99.6 percent compliance rate for nitrate MCLs
- 28 nitrate MCL violations occurred at 20 water systems
- 93.1 percent of the public water systems were in compliance for nitrate/nitrite M/R
- 393 water systems received a nitrate/nitrite M/R violation during 2000 compared to 412 water systems during 1999
- 90 percent of the M/R violations were associated with public water systems serving fewer than 500 people

For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 2000 and how many violations occurred for that contaminant, please refer to Appendix A-Compliance Table.

Figure 5.



Radionuclide Contaminants

The radionuclide group includes the contaminants gross alpha, gross beta, radium-226 and radium-228. Radium-226 and radium-228 are only monitored individually when a PWS exceeds the gross alpha action level of 5 pCi/L, otherwise they are considered part of the gross alpha analysis.

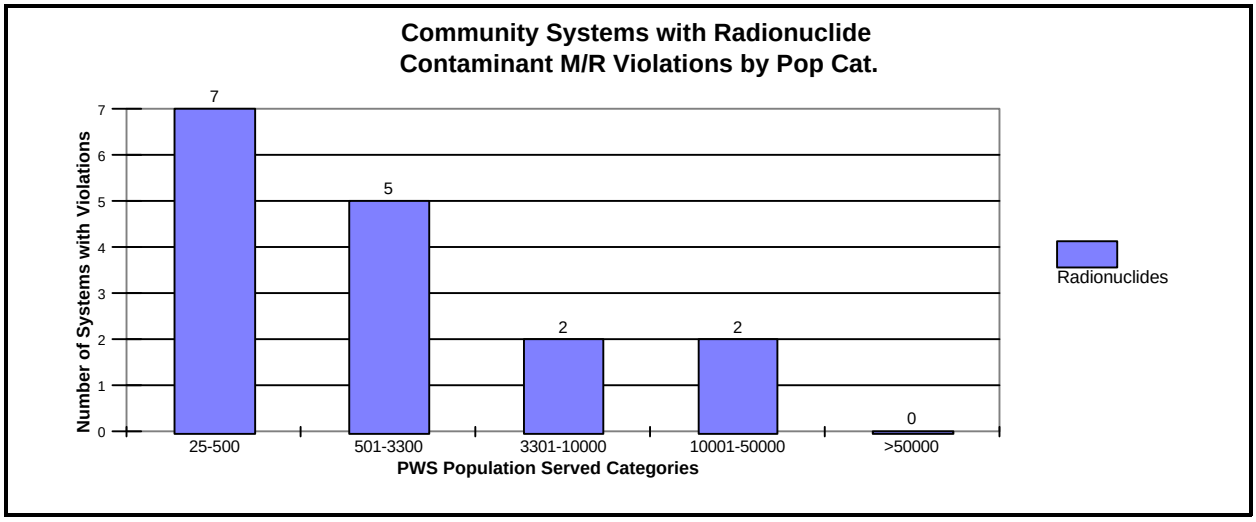
Radionuclides are monitored by all (except purchased systems) community PWSs. In general, surface water systems monitor gross alpha and beta quarterly initially and annually thereafter, and ground water systems monitor initially for gross alpha quarterly and then once every 3 years thereafter. During the 2000 calendar year, 648 water systems were required to monitor for radionuclides. The overall radionuclide MCL compliance rate is 99.5 percent. Only one community water system incurred MCL violations for radium 226/228. The overall compliance rate for radionuclide M/R is 97.5 percent. Of the 16 water systems with a violation during the 2000 calendar year, 44 percent were associated with systems serving fewer than 500 people.

Radionuclides Contaminant Group Highlights

- < 648 public water systems were required to sample for radionuclides
- < 99.5 percent compliance rate for radionuclide MCLs
- < 3 radium 226/228 MCL violations occurred at 1 water system with a population <500
- < 97.5 percent of the water systems were in compliance for radionuclides M/R
- < 44 percent of the M/R violations were associated with public water systems serving fewer than 500 people

For specific information on each contaminant, such as the number of PWSs required to sample a contaminant in 2000 and how many violations occurred for that contaminant, please refer to Appendix A.

Figure 6.



Total Coliform Regulations

The total coliform regulations establish levels of microbiological contaminants in drinking water. In Ohio, a total coliform (TC) test is used initially to determine whether or not microbiological contaminants are present. If a sample is TC positive, the system must conduct further analysis for either fecal coliform and *E. Coli* and collect additional confirmation samples. TC is monitored by all PWSs. The frequency of TC testing and the number of samples collected is dependent upon the type of PWS and the population served. Sampling requirements range from as few as one TC sample per quarter for TNC water systems to hundreds of TC samples per month for large community water systems. Two types of MCL violations, acute and non-acute, are associated with the total coliform regulations. An acute violation can occur when one or more samples collected by a public water system is total coliform positive followed by a confirmation sample which is further analyzed to determine whether the positive TC is either fecal coliform or *E. Coli* positive. An acute violation can also occur when a sufficient number of confirmation samples are not collected following one or more positive samples. Non-acute MCL violations occur when greater than 5 percent (or 2 or more samples if collecting less than 40 samples) of all the samples collected are TC positive.

During the 2000 calendar year, the compliance rate for TC acute MCL violations is 86.6 percent and 77.6 percent for non-acute MCL violations. Of the water systems with TC MCL violations, 74 percent were associated with TNC water systems, and 93 percent were associated with water systems serving less than 500 people. A significant number of the acute and non-acute violations can be attributed to a water system's failure to collect all or a sufficient number of confirmation samples following a positive total coliform sample. Major routine and follow-up M/R violations for the TC regulations are incurred by water systems when they fail to sample for or report all of the required samples during a given monitoring period. Of the water systems with one or more major routine and follow-up M/R violations, 76 percent were associated with TNC water systems and 95 percent were associated with water systems serving less than 500 people.

Total Coliform Contaminant Group Highlights

- 5,757 public water systems were required to sample for TC
- 86.6 percent compliance with the acute MCL
- 77.6 percent compliance with the TC M/R requirements
- 95 percent of the M/R violations and 93 percent of MCL violations were associated with public water systems serving fewer than 500 people, the majority being associated with TNC water systems

Figure 7.

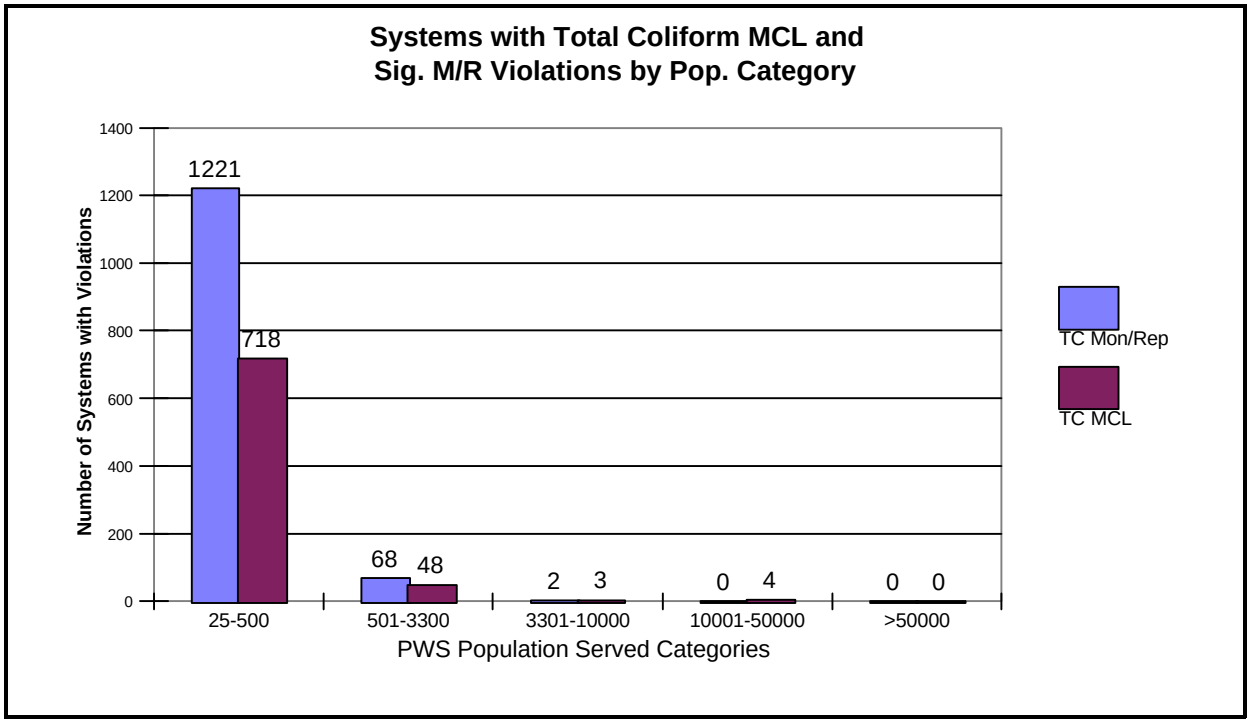
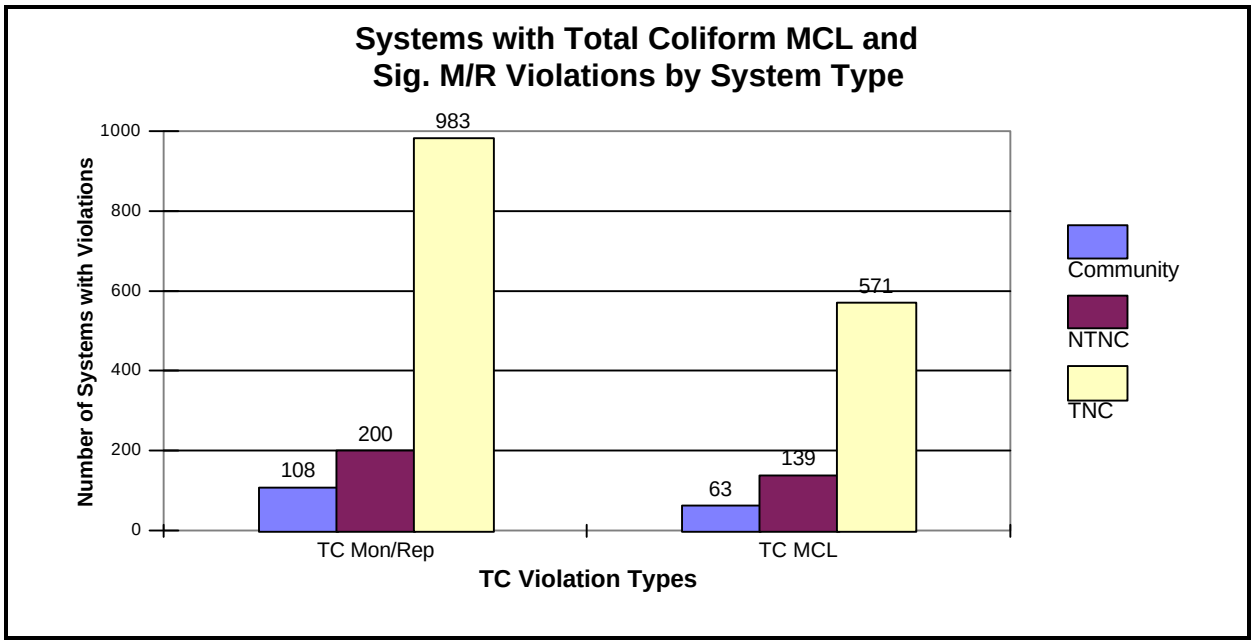


Figure 8.



Surface Water Treatment Regulations

The surface water treatment regulations (SWTR) in Ohio establish treatment and monitoring standards for water systems that have sources designated as surface water or ground water under the direct influence of surface water. Public water systems subject to these regulations are required to provide filtration and disinfection of the water. Water quality tests are performed on the water to ensure adherence to standards as specified by the regulations. Tests include evaluation and measure of sufficient chlorination contact time, turbidity levels, and residual chlorine levels in the distribution system. Failure to meet one or more of these standards results in a monthly treatment technique (TT) violation. During the 2000 calendar year, 255 water systems were subject to the SWTR TT and M/R requirements. The overall SWTR TT compliance rate is 83 percent. The the majority of water systems with these violations are those that have recently been designated as surface water systems due to having a source designated as ground water under the direct influence of surface water. The overall compliance rate for SWTR M/R is 99.6 percent. Of the 44 water systems with a TT violation during the 2000 calendar year, 75 percent were associated with systems serving fewer than 500 people.

SWTR Contaminant Group Highlights

< 255 public water systems were subject to the SWTR monitoring and treatment requirements
< 83 percent of the public water systems were in compliance with the TT requirements
< 99.6 percent of water systems which provide treatment were in compliance with the SWTR M/R requirements
< 75 percent of the water systems with a TT violations were associated with water systems serving fewer than 500 people

Figure 9.

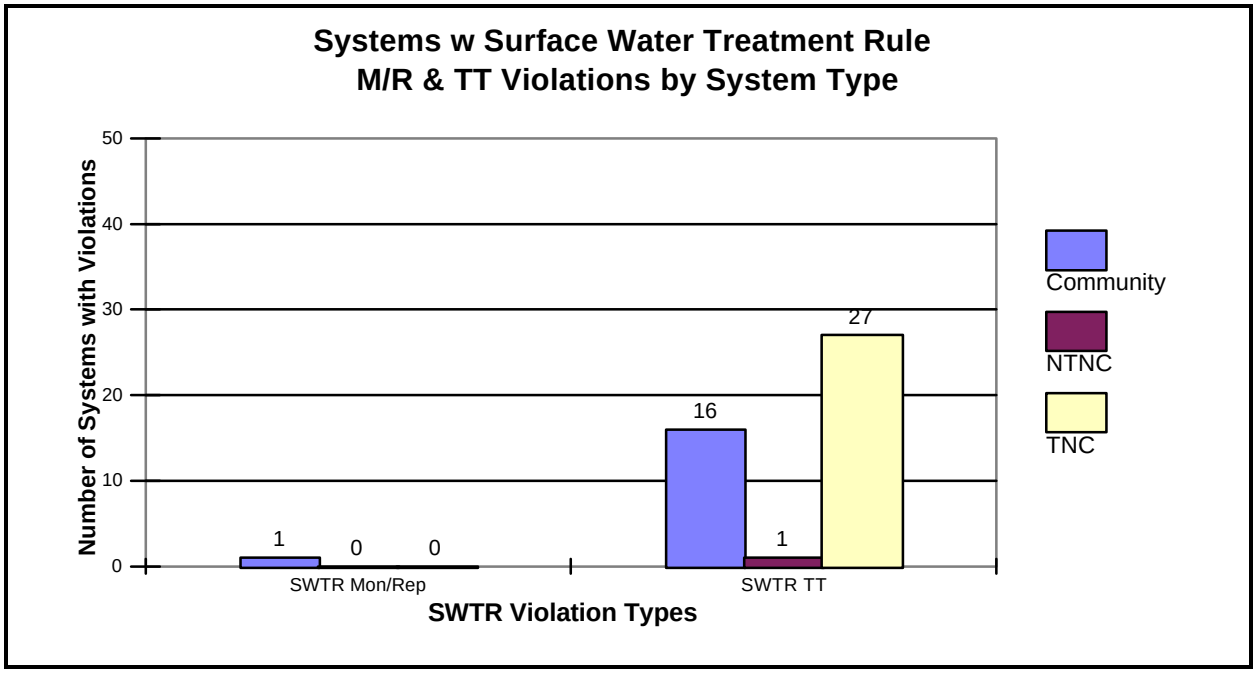
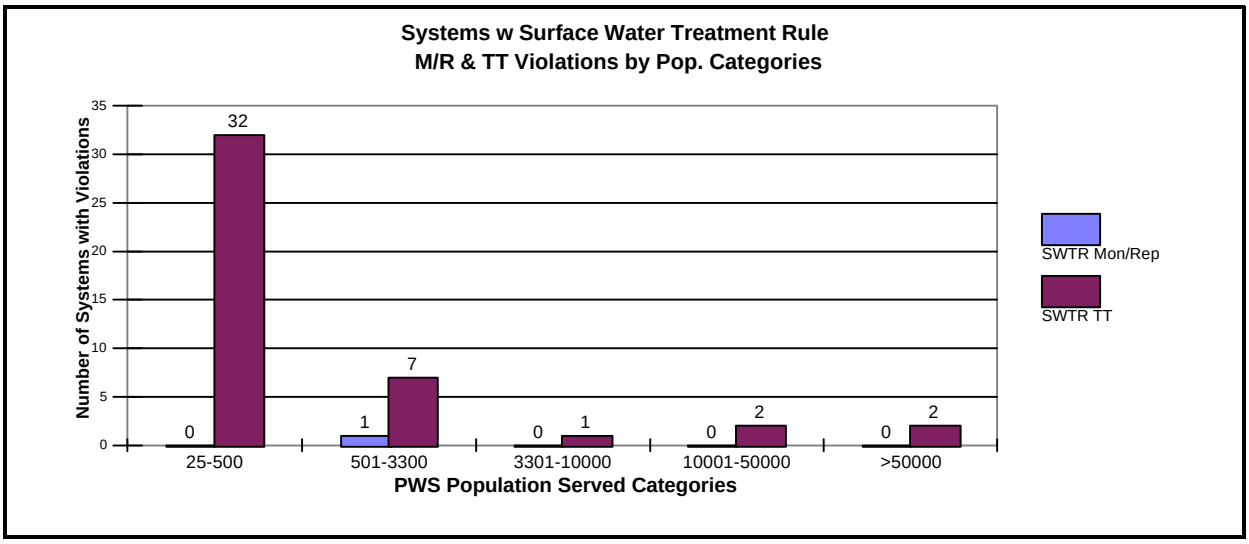


Figure 10.



Lead and Copper Regulations

The lead and copper regulations in Ohio establish standards for levels of lead and copper in the distribution systems of community and NTNC public water systems. During the beginning phases of monitoring, these public water systems are required to perform initial monitoring during two consecutive six month periods. Following completion of these periods, routine annual or triennial monitoring periods are required. For the 2000 calendar year, 96 water systems were required to perform initial monitoring and 1,155 systems were required to perform either annual or triennial monitoring. In addition, 41 systems were required to perform public education notifications due to an exceedance of the lead action level. The overall compliance for lead and copper monitoring is 89.7 percent. Of the 119 water systems with a lead and copper M/R violation, 90 percent were associated with systems serving fewer than 500 people.

Lead and Copper Contaminant Group Highlights

< 1,155 public water systems were subject to the lead and copper M/R, treatment installation and public education requirements

< 89.7 percent of water systems were in compliance with the lead and copper M/R requirements

< 90 percent of the water systems with a lead and copper M/R violation were associated with public water systems serving fewer than 500 people

Figure 11.

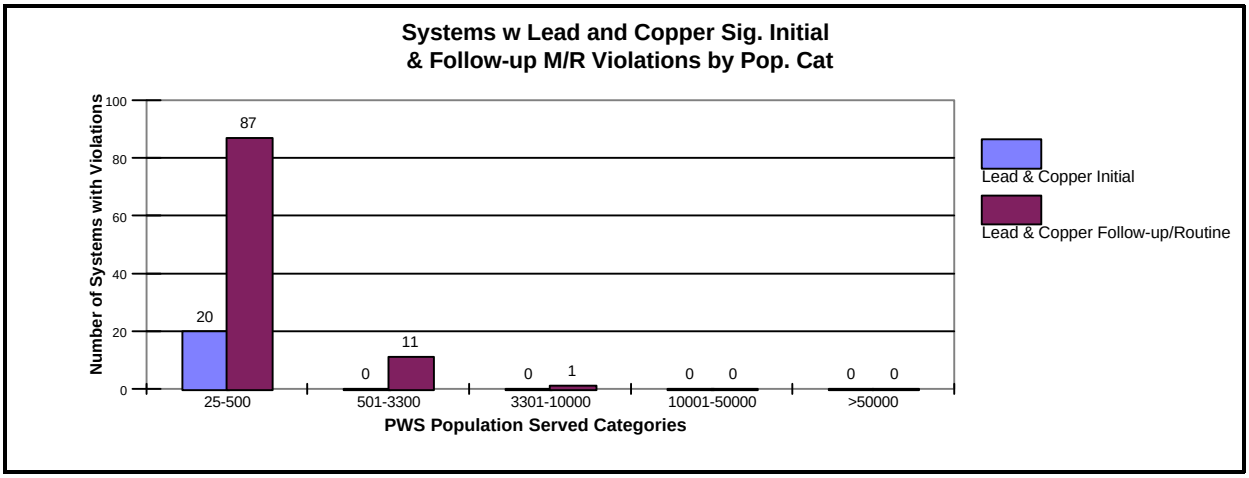
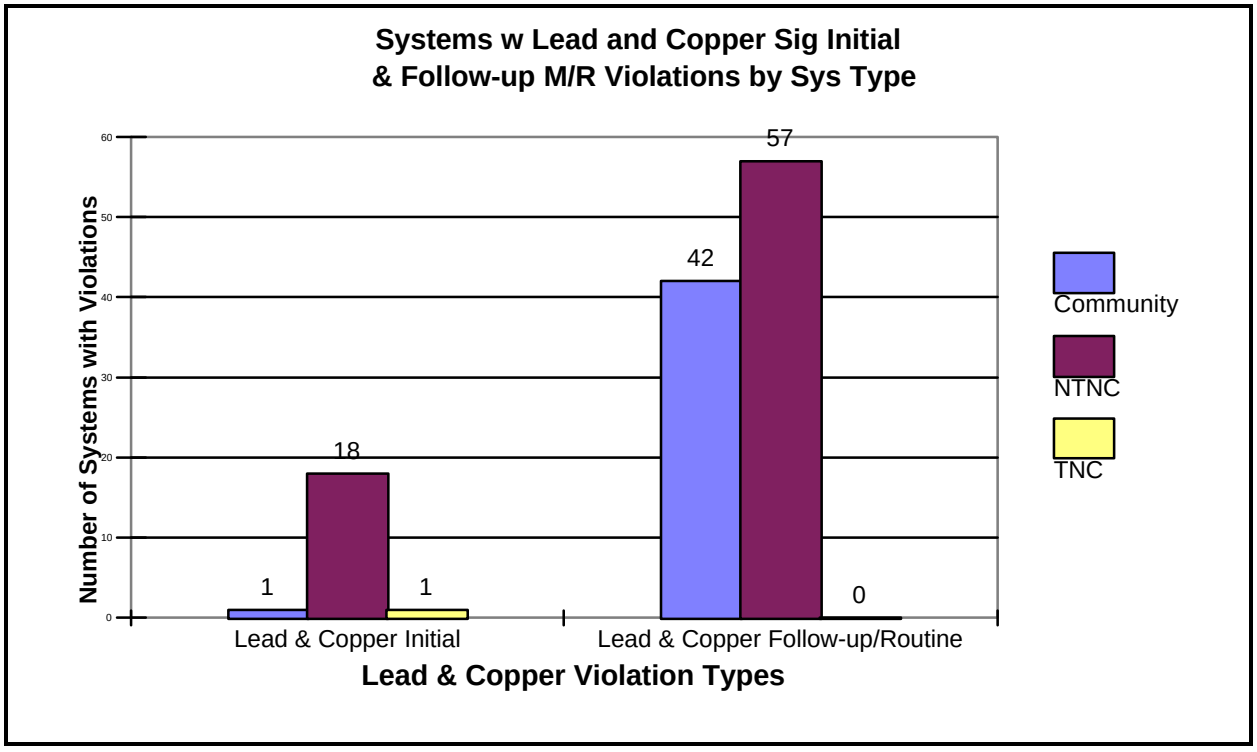


Figure 12.



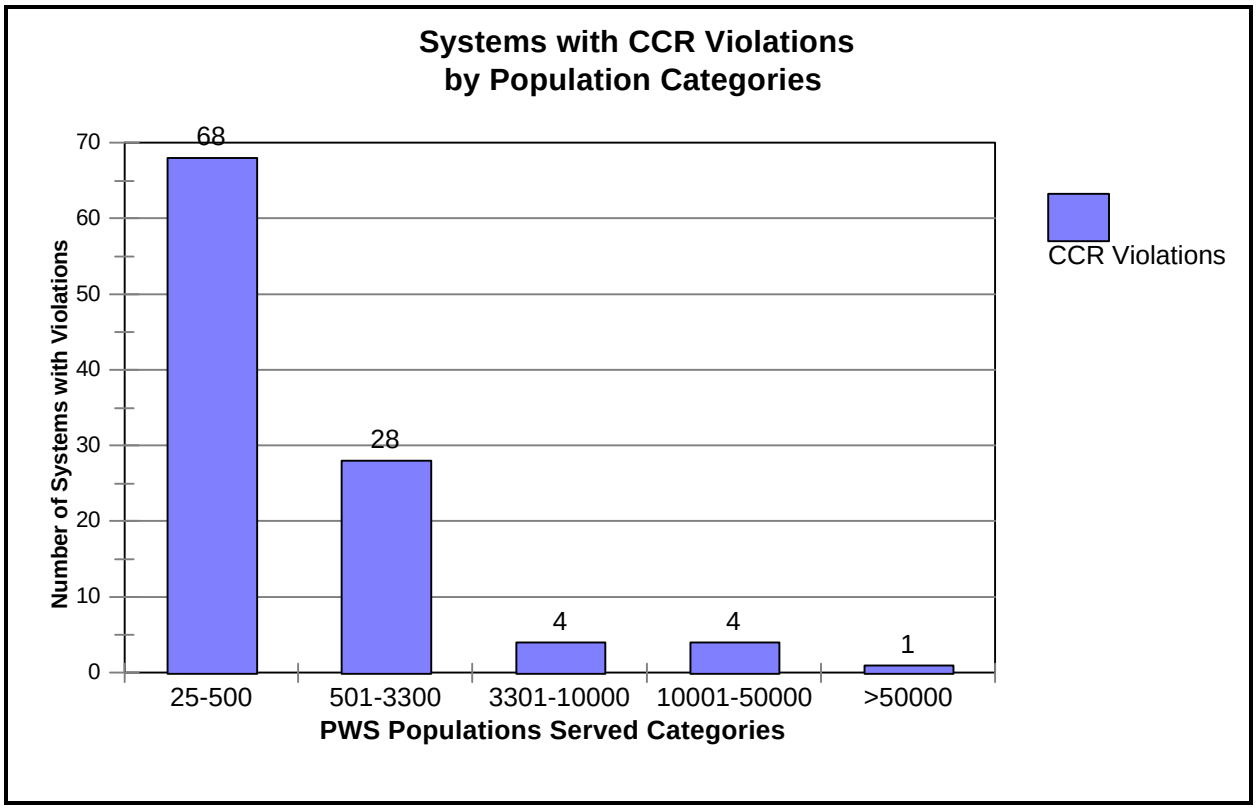
Consumer Confidence Reports

Every Community Water System is required to deliver to its customers a Consumer Confidence Report (CCR). This report is to include some educational material, provide information on the source water, levels of any detected contaminants, and compliance with drinking water regulations. A significant public notification violation occurred if a community water system completely failed to provide its customers the required annual water quality report. A total of 1,379 community water systems were required to provide their customers with a CCR. For the 2000 calendar year, 105 systems failed to provide this report in violation of these requirements. Of the 105 systems failing to meet this requirements, 65 percent were communities serving less than 500 people. Figure 13 shows the breakdown of community water systems in violation by population served. The overall compliance for CCR requirements is 92.4 percent.

Consumer Confidence Report Highlights

- 1,379 public water systems were subject CCR requirements
- 92.4 percent of the water systems were in compliance with the requirements
- 65 percent of the systems that had CCR notification violations were associated with systems serving less than 500 people

Figure 13.



Ohio EPA's Public Water System Compliance Assistance

Ohio EPA employs various methods to assist public water systems in achieving compliance of the Safe Drinking Water Act regulations. Some of these methods include: providing a sampling and monitoring schedule for each public water system; offering technical assistance during facility inspections (sanitary surveys) and all office hours; providing operator and laboratory personnel training sessions; distributing reminder postcards and/or contacting the water systems towards the end of the monitoring period to ensure collection of the required samples; and sending notice of violation letters for failure to meet the requirements for each specific regulation.

Listing of Violations

A complete listing of all violations (i.e, monitoring/reporting, maximum contaminant level, treatment technique) associated with each of the public water systems used to create the summary table presented in Appendix A is available for review at the Ohio EPA Division of Drinking and Ground Waters Central Office and District Office locations. A list of violations can also be viewed using the Internet at U.S. EPA's site know as "Envirofacts". This Internet site provides access to a subset of data available from U.S. EPA's Safe Drinking Water Information System (SDWIS). Using the Envirofacts website allows the user to select by state, county, public system name, public water system identification number and population size to obtain general facility information and violation information for public water systems in Ohio. The Internet address for this Envirofacts site is **http://www.epa.gov/enviro/html/sdwis/sdwis_query.html**.

Report Availability and Contact Information

The 2000 summary report may be obtained by writing to the State of Ohio at: PWS Annual Compliance Report, Ohio EPA - DDAGW, P.O. Box 1049, Columbus, OH 43216-1049. In addition, this summary report has been posted on the Ohio EPA's Website at **http://www.epa.state.oh.us/ddagw/annualreports.html**.

For further information concerning this report, you may contact Rick Magni or Beth Messer with the Ohio EPA Division of Drinking and Ground Waters at (614) 644-2752. If you have questions concerning the specific violations associated with individual water systems, contact your local Ohio EPA District Office in your region.

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APPENDIX A:

COMPLIANCE SUMMARY TABLE

Appendix A
Compliance Table

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Organic Contaminants											
2981	**1,1,1-Trichloroethane**	**0.2**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2977	**1,1-Dichloroethylene**	**0.007**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2985	**1,1,2-Trichloroethane**	**0.005**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2378	**1,2,4-Trichlorobenzene**	**0.07**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2931	**1,2-Dibromo-3-chloropropane (DBCP)**	**0.0002**	**NA**	**0**	**0**	**NA**				**0**	**0**	**NA**
2980	**1,2-Dichloroethane**	**0.005**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2983	**1,2-Dichloropropane**	**0.005**	**1568**	**0**	**0**	**100.0%**				**187**	**152**	**90.3%**
2063	**2,3,7,8-TCDD (Dioxin)**	**$3x10^{-8}$**	**24**	**0**	**0**	**100.0%**				**0**	**0**	**100.0%**
2110	**2,4,5-TP**	**0.05**	**NA**	**0**	**0**	**NA**				**0**	**0**	**NA**
2105	**2,4-D**	**0.07**	**302**	**0**	**0**	**100.0%**				**0**	**0**	**100.0%**
2265	**Acrylamide**						**0**	**0**	**100.0%**			

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
2051	Alachlor	0.002	209	0	0	100.0%				19	16	92.3%
2050	Atrazine	0.003	209	0	0	100.0%				19	16	92.3%
2990	Benzene	0.005	1568	0	0	100.0%				187	152	90.3%
2306	Benzo[a]pyrene	0.0002	302	0	0	100.0%				0	0	100.0%
2046	Carbofuran	0.04	302	0	0	100.0%				0	0	100.0%
2982	Carbon tetrachloride	0.005	1568	0	0	100.0%				187	152	90.3%
2959	Chlordane	0.002	NA	0	0	NA				0	0	NA
2380	cis-1,2-Dichloroethylene	0.07	1568	0	0	100.0%				187	152	90.3%
2031	Dalapon	0.2	NA	0	0	NA				0	0	NA
2035	Di(2-ethylhexyl)adipate	0.4	302	0	0	100.0%				0	0	100.0%
2039	Di(2-ethylhexyl)phthalate	0.006	333	0	0	100.0%				10	10	97.0%
2964	Dichloromethane	0.005	1568	0	0	100.0%				187	152	90.3%
2041	Dinoseb	0.007	NA	0	0	NA				0	0	NA
2032	Diquat	0.02	302	0	0	100.0%				0	0	100.0%
2033	Endothall	0.1	302	0	0	100.0%				0	0	100.0%
2005	Endrin	0.002	NA	0	0	NA				0	0	NA

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
2257	Epichlorohydrin						0	0	NA			
2992	Ethylbenzene	0.7	1568	0	0	100.0%				187	152	90.3%
2946	Ethylene dibromide	0.00005	NA	0	0	NA				0	0	NA
2034	Glyphosate	0.7	302	0	0	100.0%				0	0	100.0%
2065	Heptachlor	0.0004	NA	0	0	NA				0	0	NA
2067	Heptachlor epoxide	0.0002	NA	0	0	NA				0	0	NA
2274	Hexachlorobenzene	0.001	NA	0	0	NA				0	0	NA
2042	Hexachlorocyclopentadiene	0.05	NA	0	0	NA				0	0	NA
2010	Lindane	0.0002	302	0	0	100.0%				0	0	100.0%
2015	Methoxyachor	0.04	302	0	0	100.0%				0	0	100.0%
2989	Monochlorobenzene	0.1	1568	0	0	100.0%				187	152	90.3%
2968	o-Dichlorobenzene	0.6	1568	0	0	100.0%				187	152	90.3%
2969	p-Dichlorobenzene	0.075	1568	0	0	100.0%				187	152	90.3%
2383	Total polychlorinated biphenyls	0.0005	302	0	0	100.0%				0	0	100.0%
2326	Pentachlorophenol	0.001	302	0	0	100.0%				0	0	100.0%

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
2987	Tetrachloroethylene	0.005	1568	0	0	100.0%				187	152	90.3%
2984	Trichloroethylene	0.005	1568	0	0	100.0%				187	152	90.3%
2996	Styrene	0.1	1568	0	0	100.0%				187	152	90.3%
2991	Toluene	1	1568	0	0	100.0%				187	152	90.3%
2979	trans-1,2-Dichloroethylene	0.1	1568	0	0	100.0%				187	152	90.3%
2955	Xylenes (total)	10	1568	0	0	100.0%				187	152	90.3%
2020	Toxaphene	0.003	NA	0	0	NA				0	0	NA
2036	Oxamyl (Vydate)	0.2	302	0	0	100.0%				0	0	100.0%
2040	Picloram	0.5	302	0	0	100.0%				0	0	100.0%
2037	Simazine	0.004	209	0	0	100.0%				19	16	92.3%
2976	Vinyl chloride	0.002	1568	1	1	99.9%				187	152	90.3%
2950	Total trihalomethanes	0.10	147	0	0	100.0%				2	2	98.6%

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/R)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Inorganic Contaminants											
1074	Antimony	0.006	1053	0	0	100.0%				43	43	95.9%
1005	Arsenic	0.05	1197	0	0	100.0%				59	59	95.1%
1094	Asbestos	7 million fibers/R # 10 µm long	58	0	0	100.0%				8	8	86.2%
1010	Barium	2	649	2	1	99.8%				37	37	94.3%
1075	Beryllium	0.004	1053	0	0	100.0%				43	43	95.9%
1015	Cadmium	0.005	647	0	0	100.0%				37	37	94.3%
1020	Chromium	0.1	647	0	0	100.0%				38	38	94.1%
1024	Cyanide (as free cyanide)	0.2	74	0	0	100.0%				4	4	94.6%
1025	Fluoride	4.0	1194	0	0	100.0%				59	59	95.1%
1035	Mercury	0.002	647	0	0	100.0%				38	38	94.1%
1040	Nitrate	10 (as Nitrogen)	5679	28	20	99.6%				456	393	93.1%
1041	Nitrite	1 (as Nitrogen)	203	0	0	100.0%				8	8	96.1%

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
1045	Selenium	0.05	647	0	0	100.0%				37	37	94.3%
1085	Thallium	0.002	1053	0	0	100.0%				45	45	95.7%
1038	Total nitrate and nitrite	10 (as Nitrogen)	NA	NA	NA	NA				NA	NA	NA

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/R)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Radionuclide MCLs											
4000	**Gross alpha**	**15 pCi/R**	**648**	**1**	**1**	**99.8%**				**16**	**16**	**97.5%**
4010	**Radium-226 and radium-228**	**5 pCi/R**	**648**	**3**	**1**	**99.8%**				**0**	**0**	**100.0%**
4100	**Gross beta**	**4 mrem/yr**	**148**	**0**	**0**	**100.0%**				**3**	**3**	**98.0%**
	All Chemical Groups Subtotal		**5757**	**34**	**23**	**99.6%**				**4509**	**664**	**88.5%**

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Total Coliform Rule											
21	**Acute MCL violation**	**Presence**	**5757**	**394**	**352**	**93.9%**						
22	**Non-acute MCL violation**	**Presence**	**5757**	**735**	**601**	**89.6%**						
23,25	**Major routine and follow up monitoring**		**5757**							**1918**	**1291**	**77.6%**
28	**Sanitary survey[2]**									**0**	**0**	**100.0%**
	TCR Subtotal		**5757**	**1129**	**773**	**86.6%**				**1918**	**1291**	**77.6%**

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Surface Water Treatment Rule											
	Filtered systems											
36	**Monitoring**		**255**							**1**	**1**	**99.6%**
41	**Treatment techniques**		**255**				**225**	**44**	**82.7%**			
	Unfiltered systems											
31	**Monitoring**		**NA**							**0**	**0**	**NA**
42	**Failure to filter**		**NA**				**0**	**0**	**NA**			
	SWTR Subtotal		**255**				**225**	**44**	**82.7%**	**1**	**1**	**99.6%**

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/l)[1]	Number of Systems Required to Sample during 2000	MCLs			Treatment Techniques			Significant Monitoring/Reporting		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance	Number of Violations	Number of Systems with Violations	Percent of Systems in Compliance
	Lead and Copper Rule											
51	**Initial lead and copper tap M/R**		**96**							**25**	**20**	**79.2%**
52	**Follow-up or routine lead and copper tap M/R**		**1018**							**99**	**99**	**90.3%**
58, 62	**Treatment Installation**		**NA**				**0**	**0**	**100.0%**			
65	**Public education**		**41**				**0**	**0**	**100.0%**			
	Lead & Copper Subbtotal		**1155**				**0**	**0**	**100.00%**	**124**	**119**	**89.7%**

State:	OHIO
Reporting Interval:	JANUARY 1, 2000 - DECEMBER 31, 2000

SDWIS Codes		MCL (mg/ℝ)[3]	Number of Systems Required to Sample during 2000	CCR Notifications		
				Number of Violations	Number of Systems With Violations	Percent of Systems in Compliance
	Consumer Confidence Report (CCR):					
71	**CCR Totals**		**1379**	**105**	**105**	**92.4%**

1. Values are in milligrams per liter (mg/ℝ), unless otherwise specified.

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

NA: Not Applicable, no requirements for 2000, compliance rate is not calculated.

Consumer Confidence Report: Requires every Community Water System to deliver to its customers a brief annual water quality report. This report is to include some educational material, and will provide information on the source water, the levels of any detected contaminants, and compliance with drinking water regulations.

Significant Consumer Notification Violations: SDWIS Violation Code 71 occurs when a community water system completely fails to provide its customers the required annual water quality report.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report is from January 1, 1999 through December 31, 1999.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the "Surface Water Treatment Rule" are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system's failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system's failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system's failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.