

# **ANNUAL REPORT OF VIOLATIONS OF THE FEDERAL SAFE DRINKING WATER ACT**

January 1, 2003 through December 31, 2003



Tennessee Department of Environment and Conservation  
Division of Water Supply  
July 2004

This report was prepared in accordance with the requirements of Section 1414(c)(3)(A) of the Federal Safe Drinking Water Act and covers significant violations that occurred from January 1, 2003 through December 31, 2003. Copies of this report are located and available for review in each of the following locations:

Division of Water Supply - Central Office  
401 Church Street  
6th Floor, L&C Tower  
Nashville, TN 37243-1549  
615-532-0191

Regional Environmental Assistance Centers (EAC) - Division of Water Supply  
1-888-891-8332

Chattanooga EAC  
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Johnson City EAC  
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Johnson City, TN 37601-2162  
1-888-891-8332

Copies of the report are also located in most public libraries in the state and on the Department's Web site at: <http://www.state.tn.us/environment/dws/DWprogram.php#reports>

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### Acronyms

MCL – Maximum Contaminant Level  
 IEWSTR - Interim Enhanced Surface Water Treatment Rule  
 SWTR - Surface Water Treatment Rule

## SUMMARY

This report is provided in compliance with the requirements of the 1996 Amendments of the Federal Safe Drinking Water Act. Included in this report is both a summary of drinking water violations and detailed information on systems with a significant violation during 2003.

The majority of the water systems and operators in Tennessee are very conscientious about the quality of water provided to their customers. Many of the violations were monitoring violations caused by an oversight on the part of the water utility or due to new standards just implemented. Also included in the report are the systems that failed to deliver the Consumer Confidence Report within the required time frame.

The Department of Environment and Conservation, Division of Water Supply, has worked with water utility managers/owners and operators to address each of the violations included in this report. Enforcement action and compliance schedules were used to achieve compliance with the regulations when the water utility did not or could not return to compliance in a timely manner. The majority of the violations in this report were committed by small water systems for failure to meet the microbiological monitoring requirements or for failure to meet the microbiological maximum contaminant level for total coliform. The second largest group of violations was caused by those systems that had a treatment technique violation. With technical assistance and training, most of the systems were able to return to compliance.

The Division of Water Supply will continue to work with water utility managers/owners and operators to ensure compliance with the drinking water requirements. If you have questions concerning the information contained in this report, please contact your local water utility, the nearest Division of Water Supply Office in the Regional Environmental Assistance Center at 1-888-891-8332, or the Nashville central office of the Division of Water Supply at 615-532-0191.

**STATE OF TENNESSEE  
ANNUAL REPORT  
PUBLIC WATER SYSTEM VIOLATIONS**

The Federal Safe Drinking Water Act (SDWA) was enacted in 1974 in order to assure that the public is provided with safe drinking water. Pursuant to the Safe Drinking Water Act and Amendments to the Act, national limits or standards were established on contaminant levels in drinking water to ensure that the drinking water is safe for human consumption. Such standards are known and denoted as Maximum Contaminant Levels. Further, the Environmental Protection Agency (EPA) also establishes treatment techniques for certain contaminants that are difficult for laboratories to measure in lieu of maximum contaminant levels (MCLs) to control unacceptable levels of contaminants in water. For example, treatment techniques have been established for giardia lamblia, cryptosporidium, viruses, heterotrophic bacteria, Legionella, and turbidity. In addition, the EPA regulates how frequently public water systems must monitor their water for contaminants and report the monitoring results to the State or EPA.

A public water system is required to monitor and verify that the levels of contaminants present in the water do not exceed the maximum contaminant level for that contaminant. If a public water system fails to monitor as required or fails to report monitoring results correctly, then a monitoring or reporting violation occurs. Generally, the larger the population served by a water system, the more frequent the monitoring and reporting requirements. Additionally, the EPA requires public water systems to notify the public when they have violated these regulations. The 1996 Amendments to the Safe Drinking Water Act 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 of alternative water supplies during the violation.

The Safe Drinking Water Act applies to each of the fifty (50) States and allows States and Territories to seek EPA approval to administer their own Public Water System Supervision Program. The authority given to a state to operate a Public Water System Supervision Program is called "Primacy". In order to receive primacy, a state must meet certain requirements specified in the Safe Drinking Water Act and those regulations promulgated pursuant to the Act, including the adoption of drinking water regulations that are at least as stringent as the Federal regulations and a demonstration that they can enforce program requirements. The State of Tennessee received primacy in 1977 and assumes primary enforcement responsibility for public water systems operating under the Tennessee Safe Drinking Water Act. The Safe Drinking Water Act and the Tennessee Safe Drinking Water Act define a public water system as follows:

"Public water system" means a system for the provision of water for human consumption through pipes or other constructed conveyances, if such system serves fifteen (15) or more service connections or which regularly serves twenty-five (25) or more individuals daily at least sixty (60) days out of the year. A public water system includes:

- (i) Any collection, treatment, storage or distribution facility under control of the operator of such system and used primarily in connection with such system; and
- (ii) Any collection or pretreatment storage facility not under such control which is used primarily in connection with such system.

A "Public Water System", as defined above, is either a "community water system" or a "non-community water system". Community and non-community water systems are defined as follows:

"Community Water System" means a public water system that serves at least fifteen (15) service connections used by year-round residents. Examples are municipalities and utility districts.

"Non-Community Water System" means a public water system that is not a community water system. Examples include churches, industries and restaurants.

As the "Primacy" agency, all public water systems in Tennessee must monitor for contaminants and report monitoring results to the State of Tennessee. Primacy States, such as Tennessee, then submit data to the EPA Safe Drinking Water Information System (SDWIS) on a quarterly basis. Data submissions include public water system inventory statistics, the incidence of Maximum Contaminant Level, Major Monitoring, and Treatment Technique violations, and the enforcement actions initiated against violators.

In addition to the above quarterly data submittal to the EPA, the 1996 Amendments of the Federal Safe Drinking Water Act require States with primacy to prepare and submit an annual report to EPA regarding public water system violations within the state in accordance with Section 1414(c)(3)(A)(i). Further, pursuant to 1414(c)(3)(A)(ii), states with primacy are required to publish and distribute summaries of their reports and advise citizens of locations where the full report is available for review. After the submittal of the state reports, EPA evaluates and summarizes the reports in an annual national report, the first of which EPA made available to the public just prior to July 1, 1998. Informational reports submitted to the public and EPA by Tennessee are required to encompass violations pertaining to (1) maximum contaminant levels, (2) treatment requirements, (3) variances and exemptions, and (4) monitoring requirements determined to be significant by the EPA after consultation with the State. However, the State of Tennessee does not utilize variances and/or exemptions with respect to primary drinking water regulations; therefore, such information is absent from the report prepared and submitted by the State of Tennessee.

The State of Tennessee, Department of Environment and Conservation, Division of Water Supply, currently possesses regulatory responsibility for approximately 1,162 public water systems throughout the state. These public water systems serve an estimated population in excess of 5,424,439 individuals. All public water systems must accomplish certain monitoring and reporting requirements; however, the frequency of such requirements are dependent upon and established considering factors indicative of each water system including: population size served by the system; population type served by the system; and source water supply. Although monitoring and reporting requirements vary, failure to meet the monitoring and/or reporting requirements cause violations to be incurred.

To aid in the interpretation and understanding of reported data, the following definitions are offered in order to clarify the nature of violations which may be incurred and/or the contaminants being monitored:

"Ground water under the direct influence of surface water" means any water beneath the surface of the ground with (1) significant occurrence of insects or other macroorganisms, algae, or other large-diameter pathogens such as *Giardia lamblia*, or (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources.

"Maximum Contaminant Level (MCL)" means the maximum permissible level of a contaminant in water which is delivered at the free flowing outlet of the ultimate user of a public water system,

except in the case of turbidity and other contaminants so designated where the maximum permissible level is measured at the point of entry into the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

**Organic Contaminants:** Carbon based compounds, such as industrial solvents and pesticides. These contaminants generally gain access to water through runoff from cropland or discharge from factories.

**Inorganic Contaminants:** Non-carbon based compounds such as metals, nitrates, and asbestos. These contaminants are naturally occurring in some water but can gain access through farming practices, chemical manufacturing, and other human activities.

**Treatment Technique:** A water treatment process or procedure that is required instead of a maximum contaminant level for contaminants that laboratories cannot adequately measure.

**Surface Water Treatment Rule:** Establishes criteria under which water systems supplied by surface water or ground water under the direct influence of surface water must provide filtration as a treatment technique.

**Trihalomethanes:** Disinfection by-products produced as a result of the interaction of a disinfectant (chlorine) with naturally occurring organic material that may be present in the water.

**Waiver:** Permission or consent of the Division of Water Supply conveyed to a water supply system upon satisfactory completion of criteria established and necessary to obtain such waiver.

A summary report has been included which reveals a compilation of violations regarding each contaminant. In addition, narrative explanations and accompanying data tables are offered to reveal those public water systems that have incurred significant violations during the 2003 calendar year. The narrative explanations convey specific information regarding the contaminants monitored and/or violations incurred as well as guidance regarding the use and interpretation of the data tables.

By July 1, 2004, each community public water system is required to prepare and distribute a Consumer Confidence Report to customers served by the system. The report is required to contain information including the system's source of water, contaminants detected in the water, potential health effects information, mechanisms for customers to influence decisions made by the water system and any violations of drinking water standards that may have occurred during the previous calendar year. This report is to be prepared annually and must be made available to the water customer.

# **Tennessee Water Systems**

## **Summary Violations Report**

**January 1, 2003 through December 31, 2003**

**State of Tennessee  
Violations Summary Report 2003**

	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations		Individual Systems in Violation <sup>1</sup>
	Number of Violations	Number of Systems	Number of Violations	Number of Systems	Number of Violations	Number of Systems	
Volatile Organics	0	0			0	0	0
Synthetic Organics	0	0			1	1	1
Inorganics	0	0			16	14	14
Radionuclides	0	0			1	1	1
Total Coliform Rule	32	30			114	90	115
Surface Water Treatment Rule			27	16	22	4	20
Interim Enhanced Surface Water Treatment Rule			5	5	1	1	6
Disinfection By-Product and By-Product Precursors	7	4	0	0	6	2	6
Lead and Copper Rule			0	0	2	1	1
Consumer Confidence Report					9	9	9
<b>Total Violations in 2003</b>	<b>270</b>						
<b>Total Number of Individual Systems in Violation</b>	<b>162</b>						

1. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

**State of Tennessee  
Total Coliform Rule (TCR)  
Violations Summary Report 2003**

SDWIS Codes	Total Coliform Rule	MCL	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>
21	MCL, Acute	Presence	1	1				
21	MCL, Non-Acute	Presence	31	29				
23, 25	Routine Monitoring and Repeat Major						114	90
	<b>Total Number of Violations</b>		<b>32</b>				<b>114</b>	
	<b>Number of Individual Systems With MCL Violations</b>			<b>30</b>				
	<b>Number of Individual Systems With Significant Monitoring Violations</b>							<b>90</b>
	<b>Total Number of TCR Violations</b>		<b>146</b>					
	<b>Total Number of Individual Systems With TCR Violations</b>		<b>115</b>					

1. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Tables 1-4

**State of Tennessee  
Surface Water Treatment Rule (SWTR)  
Violations Summary Report 2003**

SDWIS Codes	Surface Water Treatment Rule	MCL	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>
<b>Filtered Systems</b>								
36	Monitoring, Routine/Repeat						22	4
41	Treatment Technique				20	15		
<b>Unfiltered Systems</b>								
31	Monitoring, Routine/Repeat						0	0
42	Failure To Filter				7	2		
	<b>Subtotal</b>				27		22	
	<b>Number of Individual Systems With Treatment Technique Violations</b>					16		
	<b>Number of Individual Systems With Significant Monitoring Violations</b>							4
	<b>Total Number of SWTR Violations</b>	<b>49</b>						
	<b>Total Number of Individual Systems With SWTR Violations</b>	<b>20</b>						

1. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Tables 5 and 7.

**State of Tennessee  
Interim Enhanced Surface Water Treatment Rule (IESWTR)  
Violations Summary Report 2003**

SDWIS Codes	Interim Enhanced Surface Water Treatment Rule	MCL	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>	Number of Violations	Number of Systems <sup>1</sup>
29	Individual Filter Effluent Monitoring Violation						1	1
38	Combined Filter Effluent Monitoring Violation						0	0
43	Treatment Technique Violation At Least One Sample > 1 NTU				4	4		
44	Treatment Technique Violation More than 5% of samples > 0.3 NTU				1	1		
	Subtotal				5		1	
	Number of Individual Systems With Treatment Technique Violations					5		
	Number of Individual Systems With Significant Monitoring Violations							1
	<b>Total Number of IESWTR Violations</b>				<b>6</b>			
	<b>Total Number of Individual Systems With IESWTR Violations</b>				<b>6</b>			

Nephelometric Turbidity Unit (NTU)

1. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Tables 6 and 8.

**State of Tennessee  
Inorganic Contaminants  
Violations Summary Report 2003**

SDWIS Codes	Inorganic Contaminants	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems	Number of Violations	Number of Systems <sup>2</sup>
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0
1094	Asbestos	7 million fibers/L > 10 Microns	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as nitrogen)	0	0			15	14
1038	Total Nitrate and Nitrite	10 (as nitrogen)	0	0			0	0
1041	Nitrite	1 (as nitrogen)	0	0			0	0
1045	Selenium	0.05	0	0			0	0
1085	Thallium	0.002	0	0			0	0
	<b>Total Number of Violations</b>		<b>0</b>				<b>15</b>	
	<b>Number of Individual Systems in Violation</b>			<b>0</b>				<b>14</b>
	<b>Total Number of Individual Systems With Inorganic Violations</b>		<b>14</b>					

1. Values are in Milligrams per Liter (MG/L), unless otherwise specified.

2. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Tables 9 and 10.

**State of Tennessee  
Synthetic Organic Contaminants  
Violations Summary Report 2003**

SDWIS Codes	Synthetic Organic Contaminants	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems <sup>2</sup>
2937	1,2-Dibromo-3-chloropropene (DBCP)	0.0002	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 <sup>-6</sup>	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0
2265	Acrymalide				0	0		
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			1	1
2306	Benzo(A)pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2946	Ethylene dibromide (EDB)	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0

(Continued on next page)

**State of Tennessee  
Synthetic Organic Contaminants  
Violations Summary Report 2003**

SDWIS Codes	Synthetic Organic Contaminants	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems	Number of Violations	Number of Systems <sup>2</sup>
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2383	Polychlorinated biphenyls	0.0005	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
	<b>Total Number of Violations</b>		<b>0</b>				<b>1</b>	
	<b>Number of Individual Systems in Violation</b>			<b>0</b>				<b>1</b>
	<b>Total Number of Individual Systems With Synthetic Organic Violations</b>		<b>1</b>					

1. Values are in Milligrams per Liter (MG/L), unless otherwise specified.

2. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Table 11.

**State of Tennessee  
Volatile Organic Contaminants  
Violations Summary Report 2003**

SDWIS Codes	Volatile Organic Contaminants	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems	Number of Violations	Number of Systems <sup>2</sup>
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2985	1,1,2-Trichloroethane	0.005	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	0.07	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2380	Cis-1,2-Dichloroethylene	0.07	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0
2992	Ethylbenzene	0.7	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	Trans-1,2-Dichloroethylene	0.1	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
	<b>Total Number of Violations</b>		<b>0</b>				<b>0</b>	
	<b>Number of Individual Systems in Violation</b>			<b>0</b>				<b>0</b>
	<b>Total Number of Individual Systems With Volatile Organic Violations</b>		<b>0</b>					

1. Values are in Milligrams per Liter (MG/L), unless otherwise specified.

2. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

**State of Tennessee  
Disinfection By-Products and By-Product Precursors  
Violations Summary Report 2003**

SDWIS Codes	Volatile Organic Contaminants	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems <sup>2</sup>	Number of Violations	Number of Systems <sup>2</sup>
2456	Total Haloacetic Acids	0.060	5	3			3	2
2920	Total Organic Carbons				0	0		
2950	Total Trihalomethanes	0.080	3	2			3	2
	<b>Number of Violations</b>		<b>8</b>		<b>0</b>		<b>6</b>	
	<b>Number of Individual Systems in Violation</b>			<b>4</b>		<b>0</b>		<b>2</b>
	<b>Total Number of Violations</b>		<b>14</b>					
	<b>Number of Individual Systems With Disinfection By-Product and/or By-Product Precursor Violations</b>		<b>6</b>					

1. Values are in Milligrams per Liter (MG/L), unless otherwise specified.

2. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Tables 12, 13 and 14.

**State of Tennessee  
Lead and Copper Rule  
Violations Summary Report 2003**

SDWIS Codes	Lead and Copper Rule	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>3</sup>	Number of Violations	Number of Systems	Number of Violations	Number of Systems <sup>3</sup>
51	Initial Lead and Copper Tap M/R <sup>2</sup>						2	1
52	Follow-up or Routine Lead and Copper Tap M/R							
	<b>Total Number of Violations</b>						<b>2</b>	
	<b>Number of Individual Systems in Violation</b>							<b>1</b>

1. Values are in Milligrams per Liter (MG/L), unless otherwise specified.

2. Monitoring / Reporting Violation (M/R)

3. Although a public water system may be out of compliance with more than one contaminant group or rule, when calculating totals, it's counted no more than once. Consequently, the sum of the number of water systems in violation, over the various contaminant groups or rules, may not add up to the total.

For detailed information see Table 15.

**State of Tennessee  
Consumer Confidence Reports  
Violations Summary Report 2003**

SDWIS Codes	Consumer Confidence Report	Number of Violations	Number of Systems
71	Failure to Provide CCR	9	9
	<b>Totals</b>	9	9

For detailed information see Table 16.

**State of Tennessee  
Radionuclides  
Violations Summary Report 2003**

SDWIS Codes	Radionuclides	MCL <sup>1</sup>	MCL Violations		Treatment Technique Violations		Significant Monitoring Violations	
			Number of Violations	Number of Systems <sup>3</sup>	Number of Violations	Number of Systems	Number of Violations	Number of Systems <sup>3</sup>
4000	Gross Alpha		0	0			1	1
4010	Radium-266 and Radium-228		0	0			0	0
4101	Gross Beta		0	0			0	0
	<b>Total Number of Violations</b>		0				1	
	<b>Number of Individual Systems in Violation</b>			0				1
	<b>Number of Individual Systems With Radionuclide Violations</b>	1						

For detailed information see Table 17

## **MICROBIOLOGICAL DATA INTERPRETATION AND GUIDANCE**

Microbiological contaminant sampling is conducted by all public water systems in Tennessee in an effort to detect biological contaminants that may be present in drinking water. All community public water systems must conduct monitoring on a monthly basis with the number of samples based on the population served. At a minimum, non-community water systems must monitor each calendar quarter. Non-community systems that serve more than one thousand (1,000) persons, utilize a ground water source under the direct influence of surface water or utilize surface water in total or in part must monitor on a monthly basis. A system collecting a sample that is positive for the presence of coliform bacteria must collect no fewer than three repeat samples for each positive result. All samples positive for the presence of total coliforms must be analyzed for the presence of fecal coliforms. The results of all routine and repeat samples are included in determining compliance with the maximum contaminant level for total coliforms. The maximum contaminant level is based on the presence or absence of total coliforms in a sample.

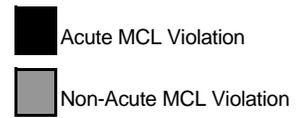
If any repeat sample is fecal coliform-positive, or if any repeat sample is total coliform-positive following a fecal coliform-positive routine sample, an acute violation of the maximum contaminant level for microbiological contaminants is incurred. For systems which collect forty (40) or more samples per month, if greater than five (5) percent of samples collected yield total coliform-positive results a non-acute violation of the maximum contaminant level for microbiological contaminants is incurred. Further, for systems collecting fewer than forty (40) samples per month, if more than one (1) sample collected yields a total coliform-positive result then a non-acute violation for microbiological contaminants is incurred.

Failure by a public water system to perform routine monitoring for microbiological contaminants constitutes a significant monitoring violation. Failure by a public water system to perform repeat monitoring following a positive coliform sample also constitutes a significant monitoring violation for microbiological contaminants.

The following data reflects the public water systems in Tennessee that incurred a violation pertaining to microbiological contaminants. The data has been categorized in accordance with the type of violation incurred; Microbiological Maximum Contaminant Level Violations or Significant Monitoring Violations. The data is further subdivided dependent upon the monitoring frequency of the water systems. In referencing the data regarding microbiological maximum contaminant level violations, the public water systems that incurred such violations are listed according to sampling frequency and are accompanied by the county in which the system is located. The data charts reveal the monitoring period during which the violation occurred and whether the violation constituted an acute or non-acute violation of the maximum contaminant level. Acute violations of the maximum contaminant level are represented with dark shading while non-acute violations of the maximum contaminant level are represented utilizing light shading. See data tables 1 and 3.

The data charts documenting significant monitoring violations list public water systems according to sampling frequency and are also accompanied by the county in which the system is located. The data charts include shaded areas corresponding to the monitoring periods during which a monitoring violation was incurred. The failure to conduct routine monitoring or repeat monitoring is not differentiated, as each constitutes a major monitoring failure and violation. See data tables 2 and 4.

**Table 1**  
**Bacteriological**  
**Maximum Contaminant Level Violations**  
**Monthly Monitoring**  
**January through December 2003**



<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
ANTIOCH WATER COMPANY	HENRY	181						Non-Acute						
BLOUNTVILLE UTILITY DISTRICT	SULLIVAN	8,782						Non-Acute						
BRADFORD WATER SYSTEM	GIBSON	1,285	Non-Acute											
CHEROKEE HILLS UTILITY DIST	POLK	290								Non-Acute				
CURTIS LAKEVIEW CAMPGROUND	SULLIVAN	120								Non-Acute				
DEKALB UTILITY DISTRICT #1	DE KALB	9,580							Non-Acute					
ENGLEWOOD WATER DEPT	MCMINN	2,974							Acute					
FIRST U D OF CARTER CO	CARTER	6,951						Non-Acute						
FIRST U.D. OF HARDIN COUNTY	HARDIN	5,430								Non-Acute				
LAGUARDO UTILITY DISTRICT	WILSON	5,524								Non-Acute				
MAURY CO WATER SYSTEM	MAURY	13,682							Non-Acute					
PIKEVILLE WATER SYSTEM	BLEDSON	3,239					Non-Acute							
TRADERS GAP RESTAURANT	JOHNSON	75						Non-Acute	Non-Acute					
TRENTON WATER SYSTEM	GIBSON	4,974						Non-Acute			Non-Acute			
Total Systems		14												
Total Violations		16												
Total Population		63,087												

**Table 2**  
**Bacteriological**  
**Significant Monitoring Violations**  
**Monthly Monitoring**  
**January through December 2003**

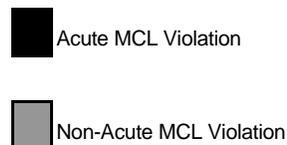
■ Significant Monitoring Violation

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
ASHLAND CITY WATER DEPT	CHEATHAM	5,332					■							
ATWOOD WATER SYSTEM	CARROLL	1,296					■							
BELL BUCKLE WATER SYSTEM	BEDFORD	1,763					■							
* BIRDSONG RESORT & MARINA	BENTON	30	■											
BLUEBIRD HILLS MOBILE HOME COM	HUMPHREYS	90										■		
BRIXWORTH APARTMENTS	DAVIDSON	497						■						
* CAMP MACK MORRIS	BENTON	190								■				
CEDAR HILL APARTMENTS	KNOX	173						■						
COLONIAL HARBOR WATER SYSTEM	BLOUNT	34									■			
COUNTY LINE TRAILER PARK	GIBSON	72					■							
CUBA LANDING MARINA	HUMPHREYS	25											■	
EAST SEVIER COUNTY U. D.	SEVIER	791											■	
ELK MILLS RESTAURANT	CARTER	35		■				■		■				
FRANKLIN ESTATES M H COMMUNITY	WILLIAMSON	725				■		■	■	■				
GARRETTS CREEK BAPTIST CHURCH	SUMNER	65										■		
GREEN GABLES APARTMENT	HAMILTON	87					■	■	■	■	■	■	■	■
GRIFFITH CREEK UTILITY DIST	MARION	1,171						■						
HARBOR UTILITY DISTRICT	BENTON	521					■							
HIDDEN HOLLOW CAMP	PUTNAM	50							■					
HIDDEN HOLLOW WATER SYSTEM	STEWART	80										■		
JEFFERSON CITY WATER & SEWER	JEFFERSON	7,968						■						
KENTON WATER DEPT	OBION	1,452					■							
LAKEMONT WATER SYSTEM	HAWKINS	111			■			■			■			
LEXINGTON AT BELLEVUE APT	DAVIDSON	575	■											
* LITTLE MILLIGAN SCHOOL	CARTER	134									■			
LOON BAY PROPERTY OWNERS ASSOC	STEWART	122											■	
MOUNT PISGAH BAPTIST CHURCH	MCMINN	150										■		
NEW HOPEWELL BAPTIST CHURCH	MCMINN	50	■											

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
NEW ZION BAPTIST CHURCH	MCMINN	100			■									
PARK IV APARTMENTS	RUTHERFORD	85										■		
POLO PARK AT JACKSON DOWNS APT	DAVIDSON	888					■							
POND HILL BAPTIST CHURCH	MCMINN	150					■							
REELFOOT WATER ASSOCIATION	OBION	726					■							
* RUNNING DEER CAMPGROUND	GREENE	90					■	■	■					
SADE CORP DBA PAINTER CK MARINA	SULLIVAN	50						■	■	■	■			
SAMBURG UTILITY DIST	OBION	748					■							
SPENCER WATER SYSTEM	VAN BUREN	4,094						■						
SPRING VILLAGE MHP	JEFFERSON	95												■
STANLEY VALLEY MARKET	HAWKINS	25					■							
STRIGGERSVILLE UTIL DIST	HAWKINS	1,099										■	■	
* TED-DEE'S CATFISH CAFE & MKT	CARROLL	25							■					
TRACE GROUP HOME	WAYNE	30	■											
TRADERS GAP RESTAURANT	JOHNSON	75											■	
* USA RAFT INC.	UNICOI	25			■									
WEST POINT U.D.	LAWRENCE	276										■		
WHISPERING PINES TRAILER COURT	MADISON	122										■		
	Total Systems	46												
	Total Violations	66												
	Total Population	32,292												

\* System which routinely monitors quarterly, but was required to monitor monthly.

**Table 3  
Bacteriological  
Maximum Contaminant Level Violations  
Quarterly Monitoring  
January through December 2003**



<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January-March	April-June	July-September	October-December
ACCURATE ARMS	HICKMAN	50				
BEECHVIEW CORPORATION	WAYNE	25				
CAMP MACK MORRIS	BENTON	190				
CEDAR FORK BAPTIST CHURCH	ROANE	90				
DAN'S CAFE	HENDERSON	25				
EXIT 47 TRUCKERS PLAZA	HAYWOOD	50				
GREEN COVE TRAILER CAMP	MONROE	92				
HALL'S GROCERY STORE	POLK	30				
HOWSE BAPTIST CHURCH	CARROLL	50				
HUBERT'S PLACE	WEAKLEY	50				
K-T CLAY COMPANY	WEAKLEY	35				
MORRILL ELECTRIC INC	UNICOI	147				
MT VERNON BAPTIST CHURCH	HAMILTON	100				
PERSIMMON HILLS GOLF COURSE	WEAKLEY	250				
WESLEY WOODS CAMP	BLOUNT	250				
WHITEWATER EXPRESS, INC	POLK	100				
	Total Population	1,534				
	Total Systems	16				
	Total Violations	16				

**Table 4**  
**Bacteriological**  
**Significant Monitoring Violations**  
**Quarterly Monitoring**  
**January through December 2003**

 Significant Monitoring Violation

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January-March	April-June	July-September	October-December
ANN AND ANDY'S DAY CARE CENTER	CARROLL	40				
BACKBONE ROCK REC AREA - USFS	JOHNSON	200				
BETHLEHEM BAPTIST CHURCH	MADISON	30				
BUCHANAN RESORT #1	HENRY	200				
BUCHANAN RESORT #2	HENRY	200				
CAMP TYSON MARKET	HENRY	50				
CARROLL LAKE COUNTRY CLUB, INC	CARROLL	100				
CEDAR GROVE BAPTIST CHURCH	HUMPHREYS	75				
COCHRAN'S LAKEVIEW CAMPGROUND	SULLIVAN	118				
DEBORAH JEAN'S MARKET	HICKMAN	25				
FAIRVIEW BAPTIST CHURCH	POLK	100				
FASTRAX SHELL #224	JEFFERSON	50				
GERMAN CRK DOCK/CMP/RST	GRAINGER	100				
GILES FLEA MARKET	CLAIBORNE	25				
GLENWOOD CHURCH OF CHRIST	HUMPHREYS	26				
HIDDEN VALLEY LAKES #1	HICKMAN	50				
HIDDEN VALLEY LAKES #2	HICKMAN	30				
HIDDEN VALLEY LAKES #3	HICKMAN	35				
HIDDEN VALLEY LAKES #4	HICKMAN	33				
HIDDEN VALLEY LAKES #5	HICKMAN	50				
HUBERT'S PLACE	WEAKLEY	50				
HUCKLEBERRY HILL RESORT	HENRY	25				
JEA -GAZEBO (RAW WATER SYSTEM)	MADISON	25				
KAMP KIWANI GIRL SCOUT CAMP	HARDEMAN	200				
KENTUCKY LAKE MKT/CAJUN PLACE	STEWART	50				

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January-March	April-June	July-September	October-December
KING OF THE ROAD RESTAURANT	CARTER	175				
LEGENDS WATER SYSTEM	HARDEMAN	25				
MIDWAY DRIVE-IN THEATRE	MCMINN	100				
MT ZION PENTECOSTEL HOLINESS	HUMPHREYS	50				
NA-CO-ME CAMP	HICKMAN	380				
NEW FRIENDSHIP BAPTIST	BRADLEY	85				
NORTHWEST HEADSTART OF HUMBOLT	GIBSON	43				
PAINTER CREEK MHP	SULLIVAN	50				
PERSIMMON HILLS GOLF COURSE	WEAKLEY	250				
PINEY CAMPGROUND E - LBL	STEWART	100				
RANCH OUTPOST GIRL SCOUT CAMP	HARDEMAN	25				
RUILMAN CENTER	WILSON	50				
SANDY'S MARKET	RUTHERFORD	70				
SHIRLEY'S RESTAURANT	CARTER	200				
TAMI'S RESTAURANT	BENTON	25				
THE OAKS FAMILY CONFERENCE CTR	GREENE	100				
USA RAFT INC.	UNICOI	25				
WATAUGA DAM RESERVATION PUA	CARTER	25				
WHITEWAY GRILL	CARTER	25				
	Total Systems	44				
	Total Violations	48				
	Total Population	3,690				

## **TREATMENT TECHNIQUE VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Treatment techniques are water treatment processes employed for the treatment and/or removal of contaminants in lieu of establishing a Maximum Contaminant Level for contaminants that are very difficult to measure. The Surface Water Treatment Rule (SWTR) and the Enhanced Surface Water Treatment Rule utilizes and establishes treatment techniques in lieu of maximum contaminant levels for *Giardia lamblia*, cryptosporidium, viruses, heterotrophic plate count bacteria, *Legionella*, and turbidity. In accordance with such requirements, water systems supplied by surface water or ground water sources under the direct influence of surface water must utilize water treatment processes (filtration and disinfection) that will achieve removal and/or inactivation of *Giardia lamblia* cysts and viruses. Water systems must perform analyses of the water in order to ensure the proper operation and effectiveness of the filtration and disinfection treatment.

In accordance with the Surface Water and Enhanced Surface Water Treatment Rule, water systems must monitor the water for turbidity (cloudiness of the water) and disinfectant residual. If a water system fails to conduct required monitoring, or fails to monitor and report less than ninety (90) percent of the required samples, as determined by population served and duration of water plant operation, then a significant monitoring violation is incurred. If a water system conducts required monitoring and reporting and the results reveal that less than ninety-five (95) percent of samples collected met the turbidity standard or disinfectant residual standard, then a treatment technique violation is incurred. Additionally, if a water system utilizing surface water or ground water under the direct influence of surface water fails to meet all criteria to avoid filtration treatment and does not install the necessary filtration treatment within the allowable eighteen (18) month deadline, then a violation is incurred regarding the failure to filter requirement.

The following data shows the public water systems in Tennessee that incurred a treatment technique violation. The data has been categorized according to the type of violation incurred. Water systems which failed to conduct required monitoring or reporting or conducted less than ninety (90) percent of the required monitoring incurred a significant monitoring violation and are revealed, together with the county of location, in the significant monitoring violation Data Table 5. Shading during that period represents the compliance period(s) during which the violation was incurred.

Water systems that failed to monitor the combined filter effluent turbidity or monitor individual filter turbidity performance are listed in Table 6. The dark shading represents a combined filter turbidity monitoring violation while the light shading represents an individual filter turbidity monitoring violation.

Water systems that performed the required monitoring but failed to achieve compliance with the standard for turbidity or disinfectant residual incurred a treatment technique violation and are revealed on the corresponding Data Table 7. Also shown are systems that failed to install required filtration within 18 months of being notified. Shading during

that period represents the compliance period(s) during which the violation was incurred. The dark shading represents violation of the 18 month time period to install filtration treatment while the light shading represents a treatment technique violation under the Surface Water Treatment Rule.

Water systems that had a treatment technique violation under the Interim Enhanced Surface Water Treatment Rule are revealed on the corresponding Data Table 8. Shading during that period represents the compliance period(s) during which the violation was incurred. The dark shading represents a violation of 1 NTU of turbidity in a single sample while the light shading represents a violation of more than 5% of the total turbidity samples exceeding 0.3 NTUs.

**Table 5**  
**Surface Water Treatment Rule**  
**Significant Monitoring Violations**

**January through December 2003**



<u>Water System Name</u>	<u>County</u>	<u>Population</u>
DOALNARA RESTORATION SOCI USA	STEWART	150
DORCHESTER #15	CUMBERLAND	25
ELM HILL MARINA	DAVIDSON	100
SADE CORP. DBA PAINTER CK MARIN/	SULLIVAN	50
	Total Population	325
	Total Systems	4
	Total Violations	22

	January	February	March	April	May	June	July	August	September	October	November	December
DOALNARA RESTORATION SOCI USA												
DORCHESTER #15												
ELM HILL MARINA												
SADE CORP. DBA PAINTER CK MARIN/												

**Table 6  
Interim Enhanced Surface Water Treatment Rule  
Significant Monitoring Violations**

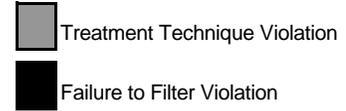
**January through December 2003**

 Individual Filter Monitoring Violation  
 Individual Filter Profile Violation

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
LENOIR CITY UTILITY BOARD	LOUDON	16,686												
	Total Population	16,686												
	Total Systems	1												
	Total Violations	1												

**Table 7  
Surface Water Treatment Rule  
Treatment Technique Violations**

**January through December 2003**

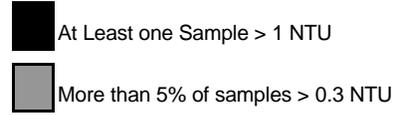


<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
BRANDON SPRINGS-LBL	STEWART	75		■	■									
BUMPUS MILLS-LAKE BARKLEY	STEWART	160					■							
CAMP CHEROKEE-MCMINN CO	MCMINN	110			■			■						
DRIFTWOOD BAR AND GRILL	HUMPHREYS	25										■	■	
E.I. DUPONT, NEW JOHNSONVILLE	HUMPHREYS	750										■		
EAGLES REST PROP OWNER ASOC.	STEWART	25									■			
FAT DADDY'S MARINA	STEWART	25										■		
HIDDEN HOLLOW CAMP	PUTNAM	50				■	■	■	■	■	■			
HUNTLAND WATER SYSTEM	FRANKLIN	1,606		■										
JARRELL MHP	BEDFORD	48	■							■				
NEW ZION BAPTIST CHURCH	MCMINN	100		■										
ORME WATER SYSTEM	MARION	87											■	
POND HILL BAPTIST CHURCH	MCMINN	150			■			■						
RED BOILING SPRINGS WATER SYS.	MACON	4,891			■									
SPRING CITY WATER SYSTEM	RHEA	2,413		■										
* TENNESSEE FITNESS SPA	WAYNE	25									■		■	
	Total Population	10,540												
	Total Systems	16												
	Total Violations	27												

\* System routinely provides filtration treatment but provided unfiltered water during the month.

**Table 8**  
**Interim Enhanced Surface Water Treatment Rule**  
**Treatment Technique Violations**

**January through December 2003**



<u>Water System Name</u>	<u>County</u>	<u>Population</u>	January	February	March	April	May	June	July	August	September	October	November	December
DAYTON WATER DEPT	RHEA	17,569												
HALLSDALE POWELL U D	KNOX	57,732												
HENDERSONVILLE U D	SUMNER	37,811												
LA FOLLETTE WATER DEPT	CAMPBELL	21,748												
* NASHVILLE WATER DEPT #3	DAVIDSON	28,750												
	Total Population	163,610												
	Total Systems	5												
	Total Violations	5												

\* Violation occurred prior to Nashville Water Dept. acquiring Cumberland Utility District.

Nephelometric Turbidity Units (NTU)

## **INORGANIC CONTAMINANTS VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Inorganic contaminant sampling is conducted by all public water systems in Tennessee in an effort to detect inorganic contaminants such as metals, nitrates or asbestos that may be present in the drinking water. Maximum contaminant levels have been established for inorganic contaminants and monitoring determines compliance with such standards. Monitoring intervals for inorganic contaminants are determined considering the type of source water utilized by the public water system with the exceptions of nitrate and asbestos. Monitoring to determine compliance with the maximum contaminant level for nitrate may be conducted no less frequently than annually. Monitoring to determine compliance with the maximum contaminant level for asbestos is conducted with consideration to population served and the vulnerability of the system to asbestos contamination (asbestos-cement piping, etc.).

The accompanying data reveals those public water systems in Tennessee that incurred an inorganic contaminant monitoring violation. In referencing the data, Data Table 9 lists all inorganic contaminants that require monitoring with the exception of Nitrate. No public water system incurred a monitoring violation for the contaminants listed in Table 9.

Data Table 10 reveals those systems that incurred a nitrate monitoring violation.

Table 9

Inorganic Contaminant  
Violations

January 1, 2003 through December 31, 2003

■ Non-Actue MCL

■ Significant Monitoring Violation

Water System Name

County

Population

ANTIMONY TOTAL	ARSENIC	BARIUM	BERYLIUM TOTAL	CADMIUM	CHROMIUM	CYANIDE	FLUORIDE	MERCURY	NICKEL	SELENIUM	THALLIUM TOTAL	ASBESTOS

No Violations

**Table 10**

**Nitrate  
Significant Monitoring Violations**

**January through December 2003**

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	<u>Date Returned to Compliance</u>
(1) BLOOMINGDALE UTILITY DISTRICT	SULLIVAN	11,741	7/22/2003
COVINGTON MUNICIPAL AIRPORT	TIPTON	200	1/26/2004
DOCKSIDE FAMILY CAMPGROUND	SULLIVAN	50	4/20/2004
DORCHESTER #15	CUMBERLAND	25	
FRENCH BROAD BAPTIST CHURCH	JEFFERSON	40	2/27/2004
(2) HERITAGE ACADEMY	PUTNAM	100	7/29/2003
HIDDEN HOLLOW CAMP	PUTNAM	50	1/6/2004
HUBERT'S PLACE	WEAKLEY	50	1/12/2004
NORTHWEST HEADSTART OF HUMBOLT	GIBSON	43	3/29/2004
PETERS' HOLLOW WATER SYSTEM	CARTER	139	2/11/2004
SPRING VILLAGE MHP	JEFFERSON	95	1/26/2004
SPRINGS DOCK	CAMPBELL	45	1/26/2004
THE OAKS FAMILY CONFERENCE CTR	GREENE	100	5/3/2004
WARDS GROVE BAPTIST CHURCH	MADISON	30	1/27/2004
	Total Population	12,708	
	Total Systems	14	
	Total Violations	15	

(1) Significant Monitoring Violation for the April - June Quarter

(2) Significant Monitoring Violations for the January - March and April - June Quarters.

## **ORGANIC CONTAMINANTS VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Organic contaminant sampling is conducted by all community, and certain non-community public water systems in Tennessee, which have not received a waiver of the monitoring requirements, in an effort to detect any organic contaminants such as solvents or pesticides which may be present in the drinking water. Maximum contaminant levels have been established for organic contaminants and monitoring determines compliance with such standards. Monitoring intervals for organic contaminants are determined considering the type of source water utilized and the type of population served by the public water system. Water systems that conduct monitoring for organic contaminants and do not detect a contaminant may reduce the sampling frequency regarding organic contaminants or request a waiver from the State regarding sampling requirements.

The accompanying data reveals one public water system in Tennessee incurred an organic contaminant monitoring violation. During the 2003 calendar year, there were no public water systems in Tennessee that incurred a maximum contaminant level violation regarding organic contaminants. To facilitate ease of use, the data has been categorized according to type of organic contaminant. Data Table 11 contains the Synthetic Organic Contaminants (SOCs) monitoring violation. In referencing the data table, the public water system that incurred monitoring violation is listed accompanied by the county of location. Organic contaminants that required monitoring are listed with violations being represented by box shading under the corresponding contaminant for which a monitoring violation was incurred.

Tennessee did not have any water system to have a significant volatile organic chemical monitoring violation in 2003 nor did any water system exceed the maximum contaminant level for any of the synthetic or volatile organic chemicals.

**Table 11**

**Synthetic Organic Contaminants  
Significant Monitoring Violations  
January through December 2003**

■ Significant Monitoring Violation

<u>System Name</u>	<u>County</u>	<u>Population</u>	2,4,5-TP SILVEX	2,4-D	1,2-DIBROMO-3-CHLOROPROPANE	ADIPATES	ALACHLOR (LASSO)	ATRAZINE	BENZO(A)PYRENE	CARBOFURAN	CHLORDANE	DALAPON	DINOSERB	DIOXIN	DIQUAT	ENDOTHALL	ENDRIN	ETHYLENE DIBROMIDE (EDB)	GLYPHOSATE	HEPTACHLOR	HEPTACHLOR EPOXIDE	HEXACHLORO BENZENE	HEXACHLOROCYCLOPENTADIENE	LINDANE	METHOXYCHLOR	PENTACHLOROPHENOL	PCCLORAM	PHTHALATES	POLYCHLORINATED BIPHENYLS	SIMAZINE	TOXAPHENE	VYDATE	
TAFT YOUTH CENTER April through June 2003	BLED SOE	1000						■																									
	Total Population	1,000																															
	Total Systems	1																															
	Total Violations	1																															

## **DISINFECTION BY-PRODUCT and BY-Product PRECURSOR VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Trihalomethane and haloacetic acid sampling is conducted by all community public water systems in Tennessee. This is a new requirement for water systems serving a population less than 10,000. Trihalomethanes and haloacetic acids are disinfection by-products that are produced as the disinfectant (chlorine) reacts with naturally occurring organic matter, such as leaf litter, which may be present in the water. Monitoring is conducted in an effort to detect the presence of trihalomethanes or haloacetic acids in the drinking water. A maximum contaminant level has been established for both total trihalomethanes and total haloacetic acids and monitoring determines compliance with the standards. Monitoring is conducted for both total trihalomethanes and haloacetic acids generally on a quarterly basis and on each water treatment plant used by a system. Other monitoring schedules may be followed depending on the size of the system and the type of source water.

The standard or maximum contaminant level for total trihalomethanes is 80 ppb while the standard for haloacetic acids is 60 ppb.

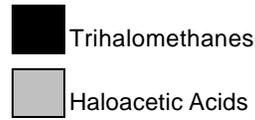
The accompanying data reveals two public community water systems in Tennessee incurred a total trihalomethane and/or haloacetic acid monitoring violation. Two public water systems in Tennessee incurred a maximum contaminant level violation regarding total trihalomethanes during the 2003 calendar year and three systems incurred a haloacetic acids maximum contaminant level violation. In referencing Data Table 12 for total trihalomethanes and haloacetic acids, the public water systems that incurred a significant monitoring violation are listed accompanied by the county of location. The data is segregated according to quarterly compliance monitoring periods with violations being represented by box shading under the corresponding compliance period during which a violation was incurred. Light colored shading indicates that haloacetic acids monitoring was not performed and dark colored shading indicates a total trihalomethanes monitoring was not performed during the applicable monitoring periods.

Table 13 lists public water systems that incurred a maximum contaminant level violation for either total trihalomethanes or total haloacetic acids. The data is segregated according to quarterly compliance periods with violations being represented by box shading under the corresponding compliance period during which a violation was incurred. Light colored shading indicates a haloacetic acids maximum contaminant level violation and dark colored shading indicates a total trihalomethanes maximum contaminant level violation during the applicable monitoring periods.

Table 14 indicates no public water system incurred a significant monitoring violation for a disinfection by-product precursor. This table would have listed systems that failed to monitor for total organic carbon (TOC).

**Table 12**

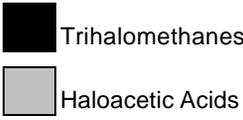
**Disinfection By-Products  
Significant Monitoring Violations  
January through December 2003**



<u>Water System Name</u>	<u>County</u>	<u>Population</u>	Jan., Feb., March	April, May, June	July, Aug., Sept.	Oct., Nov., Dec.	<u>Date Returned to Compliance</u>
BELL BUCKLE WATER SYSTEM	BEDFORD	1,763					7/30/2003
							7/30/2003
SAVANNAH VALLEY U. D.	HAMILTON	14,342					8/11/2003
							8/11/2003
Total Population		16,105					
Total Systems		2					
Total Violations		6					

**Table 13**

**Disinfection By-Products  
Maximum Contaminant Level Violations  
January through December 2003**

<u>Water System Name</u>	<u>County</u>	<u>Population</u>					<u>Date Returned to Compliance</u>
			Jan., Feb., March	April, May, June	July, Aug., Sept.	Oct., Nov., Dec.	
CROSSVILLE WATER DEPT	CUMBERLAND	15,938					N/A 9/10/2003
JAMESTOWN WATER DEPT	FENTRESS	3,257					4/15/2003 4/15/2003
LIVINGSTON WATER DEPT	OVERTON	10,578					N/A 7/8/2003
WINCHESTER WATER SYSTEM	FRANKLIN	17,316					12/1/2003 N/A
	Total Population	47,089					
	Total Systems	4					
	Total Violations	8					

Maximum Contaminant Level violations reflect monitoring results for the previous 12 month period, and are reported as violations during the last quarter of the 12 month monitoring cycle.

Table 14

**Disinfection By-Product Precursors  
Significant Monitoring Violations  
January through December 2003**

 Total Organic Carbon

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	Jan., Feb., March	April, May, June	July, Aug., Sept.	Oct., Nov., Dec.
No Violations			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Systems monitor for TOCs each month during a calendar quarter.  
Failure to monitor during any month of the quarter would cause a quarterly violation.

## **LEAD AND COPPER VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Lead and Copper sampling is conducted by all community and certain non-community public water systems in Tennessee in an effort to detect excessive levels of lead and/or copper in drinking water. The maximum allowable concentrations of lead and/or copper in drinking water are denoted as “action levels”. Treatment techniques have been established that include requirements for corrosion control treatment, source water treatment, lead service line replacement and public education for systems which exceed the action levels for lead and/or copper. Tap water monitoring determines compliance with such standards. Initial tap water monitoring is conducted for lead and copper on six (6) month monitoring intervals. If a water system meets the action levels for lead and copper during each of two (2) consecutive six (6) month monitoring periods, or maintains optimal corrosion control, the system may request to reduce monitoring to an annual basis.

Only one public water system in Tennessee incurred a lead and copper monitoring violation during 2003. This was a newly established system that did not fully understand the monitoring requirements. Table 15 shows the lead and copper monitoring violation for 2003.

**Table 15**

**Lead Copper Rule  
Significant Monitoring Violations  
January through December 2003**

<u>Water System Name</u>	<u>County</u>	<u>Popul.</u>	<u>Violation Periods</u>
NORTHWEST HEADSTART OF HUMBOLT	GIBSON	43	January - June 2003 July - December 2003
	Total Population	43	
	Total Systems	1	
	Total Violations	2	

## **CONSUMER CONFIDENCE REPORT VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Beginning in 1998 community public water systems were required to furnish a report to its customers with certain information about the water being furnished. Included in this report is the source of water for the local water utility, certain health effects language, information concerning contaminants detected, and information on violations that may have occurred during the previous calendar year. There is also information on the time and location of any board meetings to promote public participation in the decision making process of the water utility.

All systems serving 10,000 or more persons are required to furnish an individual copy of the report to each water user. Systems serving less than 10,000 persons are given the option to notify their customers that the report will be published in a newspaper serving the local area. Even though the report is published in the paper, the water utility is required to furnish an individual copy of the report to any person requesting a copy.

Nine water systems incurred a Consumer Confidence Report (CCR) reporting violation on July 1, 2003, by failing to provide a copy of their 2002 Consumer Confidence Report to the state and/or to their customers by the required due date. All nine systems had returned to compliance by July 17, 2003.

Public water systems that incurred a violation of the Consumer Confidence Report are listed in Table 16.

**Table 16**

**Consumer Confidence Report Violations  
January through December 2003**

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	<u>Date Returned to Compliance</u>
DOGWOOD CREEK APARTMENTS	SHELBY	723	7/11/2003
FRANKLIN ESTATES M H COMMUNITY	WILLIAMSON	725	7/8/2003
GROVE AT ISLAND DRIVE APTS.	SHELBY	564	7/9/2003
HUNTERS TRACE APARTMENTS	SHELBY	499	7/11/2003
KENTON WATER DEPT	OBION	1452	7/17/2003
MADISON HUMPHREYS CENTER APT	SHELBY	780	7/9/2003
NORTH ELIZABETHTON WATER CO-OP	CARTER	1130	7/23/2003
RUTHERFORD WATER SYSTEM	GIBSON	1446	7/17/2003
TELLICO PLAINS WATER DEPT	MONROE	5107	7/9/2003
	Total Population	12,426	
	Total Systems	9	
	Total Violations	9	

## **RADIONUCLIDE VIOLATIONS DATA INTERPRETATION AND GUIDANCE**

Public water systems are required to monitor for certain naturally occurring and man-made radionuclides to insure the water being provided to their customers meet standards. Radionuclide samples are collected every quarter with the results being the average of all the quarterly samples. Tennessee had one system fail to meet the maximum contaminant level during the current reporting period. This water system has constructed a new well that testing has shown the water to comply with the radionuclide standards. Steps are being taken to prepare this well for service.

Table 17 contains the radionuclide violation information.

**Table 17**

**Radionuclide Violations  
January through December 2003**

<u>Water System Name</u>	<u>County</u>	<u>Population</u>	<u>Violation Type</u>	<u>Period</u>
HERITAGE ACADEMY	PUTNAM	80	Monitoring	January - March 2003
	Total Population	80		
	Total Systems	1		
	Total Violations	1		

## **DIVISION OF WATER SUPPLY ENFORCEMENT ACTION SUMMARY**

In order to address non-compliance issues the Division of Water Supply utilizes a number of enforcement mechanisms which include: issuance of Notices of Violation and/or Notices of Non-Compliance which officially notifies a public water system official or owner of a violation and provides guidance to facilitate actions to return the system to compliance; technical assistance and training; conducting Compliance Review and/or Show Cause meetings during which compliance status is discussed and imperative actions to achieve compliance are reviewed; and issuance of administrative orders and assessments which contain monetary civil penalties for violations incurred. The Department of Environment and Conservation and the Division of Water Supply are granted authority by the Tennessee Safe Drinking Water Act, through the department's commissioner, to initiate enforcement action and issue such administrative orders regarding violations of the Tennessee Safe Drinking Water Act, T.C.A. § 68-221-701 *et seq.*

The Division of Water Supply initially attempts to assist water systems with violations achieve compliance through a system of official notifications, technical assistance and training, on-site inspections and compliance review meetings. Under certain circumstances, water systems are provided the opportunity to execute a Letter of Agreement indicating an understanding of non-compliance issues and conveying an agreement to undertake the necessary actions to prevent a recurrence of non-compliance. In situations where the division has issued notifications, conducted technical assistance and/or on-site inspections or conducted compliance assessment meetings and violations are not addressed by the water utility or are not addressed in a timely manner, enforcement action in the form of an Administrative Order is customarily recommended and/or initiated. Such Administrative Orders contain monetary civil penalties assessed for violations and mandate that compliance be achieved.

The majority of violations incurred by water utilities are addressed and corrected prior to the necessity for issuance of an Administrative Order. With technical assistance and training by the division, most systems are able to return to compliance. However, there are water systems that incurred violations that were not addressed or corrected making an Administrative Order warranted. Consequently, during calendar year 2003, 16 Administrative Orders were issued to public water systems and/or certified operators in Tennessee. The Administrative Orders encompassed a variety of violations including those contained in this Annual Report of Violations.