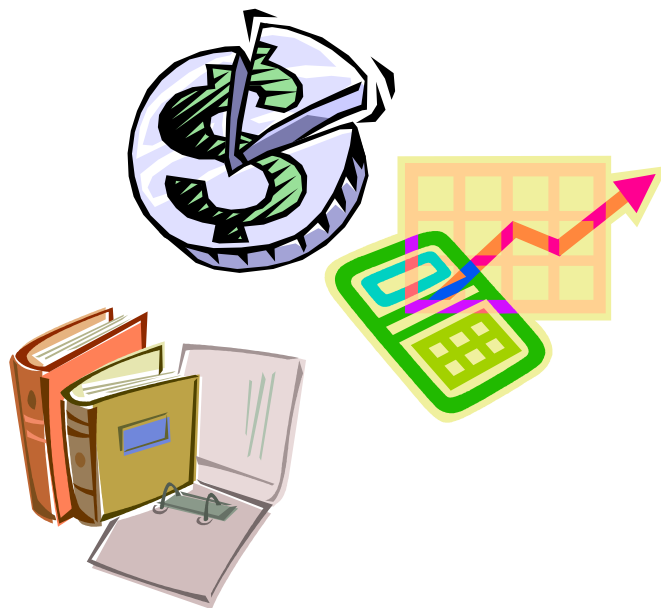


Module 3

The Safe Drinking Water Act

Workbook



Financial/Managerial Series

This course includes content developed by the Pennsylvania Department of Environmental Protection in cooperation with the following grantees:

RCAP Solutions, Inc.
Penn State Harrisburg Environmental Training Center

Training Module 3

The Safe Drinking Water Act



Objectives:

By the end of the course, the learner should be able to:

- Understand the four areas of responsibility of public water systems under the SDWA: environmental compliance, monitoring and reporting, record keeping, and public notification.
- Recognize the contaminant groupings their utility must test for, and know what an MCL is.
- Identify whether or not their utility is meeting record keeping and Consumer Confidence Reporting (CCR) requirements.
- Know the public notification requirements and the difference between Tier 1, 2 and 3 Violations, and understand what actions can be taken to enforce regulations, and by whom.
- Understand that there are different requirements between treating and protecting ground water sources and surface water sources.
- Know it is important to stay on top of the ever-changing rules and compliance deadlines set forth by the U.S. Environmental Protection Agency (EPA) and the Pennsylvania Department of Environmental Protection (DEP).
- Understand that a water system's financial, managerial and technical capacity directly impacts its current and future environmental compliance and that it must operate as a business and be managed appropriately.

Table of Contents

- Introduction p. 3
- Water System and Regulator Responsibilities p. 4
- Making Sure Drinking Water is Safe p. 7
- Regulatory Compliance p. 13
- Other Provisions of the Safe Drinking Water Act p. 16
- Summary p. 19
- Resources and References p. 21

Introduction



This module is intended as a basic introduction to the responsibilities of water systems under the Safe Drinking Water Act.

The goals of the module are:

- You need to understand the four areas of responsibility of public water systems under the SDWA: environmental compliance, monitoring and reporting, record keeping, and public notification.
- You will be able to recognize the contaminant groupings your utility must test for, and know what an MCL is.
- You will be able to identify whether or not your utility is meeting record keeping and Consumer Confidence Reporting (CCR) requirements.
- You will know the difference between Tier 1, 2, and 3 Violations, understand what actions can be taken to enforce regulations, and by whom.
- You will understand that there are different requirements between treating and protecting ground water sources and surface water sources.
- You will know it is important to stay on top of the ever-changing rules and compliance deadlines set forth by the EPA.
- You will understand that a water system's financial, managerial and technical capacity directly impacts its current and future environmental compliance and that it must operate as a business, and be managed appropriately.



The law is based on a history of improving public health over the years. For the amateur historians in our audience, a brief history of public health leading up to the 1996 Amendments to the Safe Drinking Water Act follows:

- 4000 year old Sanskrit Records demonstrate boiling water directives (little was known about disease)
- 1799 - Philadelphia used wooden pipes to move drinking water (connections of water quality and health)
- 1893 - The US Interstate Quarantine Act empowered the US Public Health Service to control waterborne communicable disease (early scientific understanding and protective legislation)
- 1942 - “Manual of Water Works Practice” was established
- 1962 - Requirement that qualified personnel supervise and operate water systems
- 1974 - Safe Drinking Water Act (first comprehensive drinking water regulation, advanced scientific understanding and protective legislation)
- 1986 - SDWA Amendments (set very high standards – caused backlash to unfunded mandates)
- 1996 - SDWA Amendments (maintained tough standards but provided regulatory relief)

Water System and Regulator Responsibilities



An important point all water system board members must understand is that, in addition to many other legal and financial issues, their governing body will be held liable for environmental compliance. They are responsible for providing safe drinking water to their customers. The accountability does not rest just on the shoulders of the operators,

who are responsible for correctly reporting what is happening. Board members can be held individually accountable in extreme cases where they have acted criminally, such as falsifying documents.

An example of this occurred in Walkerton, Ontario. See the Walkerton Timeline handout for details.



The Environmental Protection Agency (EPA) delegates the authority to enforce SDWA regulations to state regulatory agencies. This is called primacy. In Pennsylvania, the primacy agency is the DEP. Pennsylvania has its own Safe Drinking Water Act, administered by DEP, which closely parallels and references the U.S. Safe Drinking Water Act. However, there are parts of the PA SDWA that are more detailed or stringent.

The EPA also provides an annual revolving fund to make funds available at the local level to pay for new water systems, or improvements to existing systems. In Pennsylvania, the primacy agency administering the State Revolving Fund is the Pennsylvania Infrastructure Investment Authority, also known as PENNVEST.



How are public water systems (PWS) defined? A PWS is any system serving 15 or more connections or an average of 25 or more people per day for at least 60 days per year. PWS can be categorized into one of the following groups. Each has its own requirements.

- Community Water System (CWS) is a PWS that supplies water to the same residential population year-round. The smallest example of a community system might be a village or manufactured housing community.

- Non-Transient Non-Community Water System (NTNCWS) is a PWS that regularly supplies water to at least 25 of the same people at least 6 months per year, but not to their residences. These include schools, factories and hospitals that have their own water supplies.
- Transient Non-Community Water System (TNCWS) is a PWS that provides water in a place where people do not remain for long periods of time. Examples include restaurants, rest stops, and campgrounds that have their own water supply.

Any system that serves fewer than 15 connections, or 25 people, is not regulated under the SDWA. This includes individual wells serving single residences.

Refer to the Classification of Water Systems handout for additional information.



Nationally, 85% of all U.S. households are served by public water systems. Currently, there are over 172,000 public water systems in our country, and nearly 11,000 in PA, including 2300 community water systems. 66% of them serve populations less than 500 people.

Do you fall into that category?

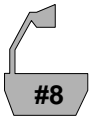
Nevertheless, these systems must comply with nearly the same regulatory challenges as very large systems.

Making Sure Drinking Water is Safe



With regard to environmental regulatory compliance, community water systems are charged with four responsibilities:

- Meeting safe drinking water standards set by the EPA and DEP
- Monitoring and reporting
- Record keeping
- Public notification



The EPA regulates more than 100 biological and chemical substances, and more are being added each year. Maximum Contaminant Levels (MCL) are set for each substance. These are established by the EPA based on human health and other scientific studies and are the maximum allowable amount of the substance in the drinking water. The EPA is continuously revising standards. Local systems should review 40 CFR parts 136 to 149 of the Safe Drinking Water Act for the most current regulations.



MCL Tip

- How can I find specific Maximum Contaminant Levels for regulated substances?
- A list of these can be easily accessed on the EPA's website by going to www.epa.gov/safewater/mcl.html#mcls or at DEP's website, www.dep.state.pa.us, subject "Drinking Water." The site includes a list of secondary standards for substances that have recommended, though not required, MCLs. These generally affect the aesthetic quality (color, taste, odor) of water.

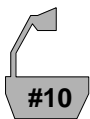


#9

The types of contaminants regulated by the EPA include:

- Microbial contaminants (including Turbidity)
- Chemical & Radiological contaminants

In addition, there are treatment technique requirements that apply in lieu of MCLs. We'll cover both of these briefly in the next couple slides. More information is available from EPA or DEP.



#10

Microbial contaminant indicators may include:

- Total Coliform bacteria
 - Indicator of potentially harmful organisms
- Fecal Coliform (*E. coli*)

- Bacteria naturally present in intestines of warm-blooded animals
- Indicator of contamination by human or animal waste
- Viruses
 - Can cause diarrhea, nausea, and/or stomach cramps
- Protozoa
 - Disease-causing organisms originating in the intestines of warm-blooded animals
 - Includes *Giardia lamblia* and *Cryptosporidium parvum*
- Bacterial Pathogens
 - Such as *Legionella* can cause Legionnaire's Disease



Chemical & Radiological contaminants include:

- Inorganic Chemicals (IOCs)
 - IOCs are mineral-based compounds that can occur naturally in water or can enter through farming, industrial processes, and other human activities
 - Regulated IOCs include arsenic, asbestos, copper, cyanide, lead, mercury, nitrates, and certain radionuclides, including radium 226 and 228, uranium, and gross alpha particle radioactivity.
- Volatile Organic Chemicals (VOCs)
 - Sources of VOCs include discharge from factories, leakage from gas storage tanks, and leaching from landfills.
 - VOCs include industrial and chemical solvents, such as benzene, toluene, and MTBE.
- Synthetic Organic Chemicals (SOCs)

- SOCs are man-made, carbon-based compounds that can enter water through runoff from cropland or discharge from factories.
- SOCs include pesticides and herbicides such as atrazine, alachlor, endrin, and lindane.
- Disinfectants and Disinfection Byproducts
 - Chemicals such as chlorine, chloramines, and chlorine dioxide are disinfectants that have maximum residual disinfectant levels (MRDL).
 - Disinfection Byproducts (DBPs) form when disinfectants added to drinking water react with naturally occurring organic and inorganic matter in water.
 - Regulated DBPs include total trihalomethanes (TTHM), haloacetic acids (HAA5), bromate, and chlorite.



Treatment techniques include:

- Turbidity
 - Cloudiness, measured by the amount of light transmission
 - Indicator for water quality and effectiveness of treatment
- Filtration and Disinfection
 - Surface waters – continuous filtration and disinfection
 - Groundwater – continuous disinfection only
- Lead and Copper
 - Achieve Optimal Corrosion Control treatment, which minimizes lead and copper concentrations at the user's tap



Community water treatment plants must be run by certified operators. While other employees may assist in the operations, unless certified they must be supervised by an individual certified by the state. The operator is responsible for devising a sample siting plan and getting it approved by the primacy agency in Pennsylvania, the DEP. This plan spells out where and when water samples will be collected and sent to a certified testing lab. The operator must maintain records of sample test results and show them on demand if a surprise inspection is conducted.



Records must be kept available for review for a specific length of time. These include:

- Copies of lab results (with name of person that collected the sample)
- Dates and locations of sampling points
- Past and current violations, and steps taken to correct them
- Sanitary survey reports
- Annual water supply report
- All other water quality information



Record retention requirements vary with the type of reports:

Bacteriological analysis	5 years
Chemical analysis	10 years
Written reports (e.g. engineering, sanitary surveys)	10 years after completion

Variance and exceptions
Violation corrective actions

5 years after expiration
3 years



Consumer Confidence Reports (CCR) are annual water quality reports that a system must generate and provide to its customers. A CCR identifies where the water comes from, what is in the water, and what the customer can do to help protect their water. It also lists any violations in the past year and health risks. It explains how violations were corrected, and outlines any projects being planned to improve the water system. These must be sent to customers by July 1 of each year.



CCR Tip

- Where can I find help in preparing a Consumer Confidence Report?
- Actually, the EPA offers free software that can be ordered or downloaded from their website, www.epa.gov.



Let's take the time to complete a short exercise to see what you've learned.

SDWA Exercise 1

1. SDWA stands for _____.
2. 85% of all U.S. households are served by _____ water systems.

3. MCL stands for _____.
4. Ensuring compliance with the SDWA is the responsibility of the water system _____.
5. The primacy agency that enforces SDWA regulations in PA is the _____.
6. The primacy agency that administers the State Revolving Fund is _____.
7. Community water treatment plants must be run by a _____ operator.
8. A CCR is a _____.
9. A Public Water System is regulated under the SDWA if it serves _____ or more connections or an average of _____ or more people for at least _____ days per year.
10. A restaurant with its own water supply would likely be considered a _____.

Regulatory Compliance



Engineering and treatment techniques must be approved by the primacy agency (in Pennsylvania, the DEP). The DEP may set stricter standards than the EPA, but cannot adopt or enforce less stringent requirements.

If a system exceeds the Maximum Contaminant Level for any regulated substance, it must report the violation immediately to the DEP. In some urban counties water systems should report violations to their county health department or county emergency management agency. In either case, the regulatory agency will give directions to correct violations, and will require notices (public notification) to be sent out to customers.



The Public Notification (PN) Rule ensures that all people who drink a system's water are informed about any violations that have occurred and their possible health consequences. The PN Rule groups the public notification requirements in 3 tiers, depending on the seriousness of the violation or situation.

Violations fall into three categories:

- Tier 1 Violations pose an immediate threat to human health. The public should be advised within hours via broadcast media and newspapers (24 hours max).
- Tier 2 Violations do not pose an immediate threat, but customers must be notified within a specific number of days to be determined by the regulatory agency (30 days max).
- Tier 3 Violations do not pose a direct impact to human health, and notification may not be required for months. Follow the directions of the regulatory agency (1 year max).



Regulatory enforcement steps, from the discovery of a violation, usually start with a Field Order by your local DEP sanitarian. If the violation is not corrected, a Consent Order will be issued by the DEP. Depending on the urgency, they will require a Corrective Action Plan to be submitted within a specific timeframe. If a system still does not take action, Civil Actions can be filed against the governing body for noncompliance. Criminal Actions may be filed for falsification of information. Violations rarely escalate into court proceedings.



Help Is Available!

- The DEP and a number of agencies offer free technical assistance to help small community water systems find solutions to operational and compliance problems. Tapping into these resources demonstrates a system's concern and commitment to achieving compliance. See the Resources and References slide for more information.



Independent of any regulatory actions, a citizen may take civil action against a system for noncompliance after a 60 day notification of their intent to file the civil action. Even if regulators are not pressing to solve a violation, the threat of such action should spur systems to resolve problems quickly.



The federal government may step in during an emergency, or if state and local authorities do not take appropriate action. The EPA can fine local water systems up to \$25,000 per day if they ignore emergency orders.

Other Provisions of the Safe Drinking Water Act



In addition to MCLs and treatment standards, there are other monitoring rules in place. Some of these are specific to the water system's population served, type of raw water source, treatment process, or previous monitoring results.



Systems that use groundwater as their source must establish a Well Head Protection Program. Underground pollution plumes can travel long distances over time. This requires a system to assess the hydrology of the well head zone and perform a risk assessment of past and future activities.

Examples of potential threats to well water are:

- Underground Storage Tanks (UST)
- Urban and agricultural runoff
- Accidental truck and rail car spills
- Karst Topography (limestone, sinkholes)
- Inadequate water supplies and slow recharge rates

Groundwater systems are not required to provide filtration unless they are influenced by surface water, determined through a Surface Water Identification Protocol (SWIP); however all regulated systems must disinfect the water.



Systems that draw surface water have even more rules to contend with since surface water is more susceptible to pollution and contamination. Special monitoring, filtration and disinfection treatments will be required. These are specifically established for each system.



One requirement worth noting is the Lead and Copper Rule, which requires systems to evaluate whether or not their water is corrosive enough to potentially release these metals into their treated water. Many homes have copper pipes and solder with lead content. Special treatment to increase the pH may be required if tap water at the user end is ever found to have elevated lead or copper.



Governing bodies of water systems should be aware that there are many new or updated rules and compliance deadlines their systems may need to prepare for. Without going into the specific requirements of each, some of the rules to be concerned about include:

Radon	Deadline in 2005
Filter Back Wash Rule	Deadline in 2005
LT1ESWTR	Deadline in 2006
Radionuclides	Deadline in 2005
Arsenic	Deadline in 2006
Ground Water Rule	Deadline in 2006
LT2ESWTR	Deadline in 2007
Stage 2 DBPR	Deadline in 2007

The acronyms above stand for: Long-Term 1 Enhanced Surface Water Treatment Rule, Long-Term 2 Enhanced Surface Water Treatment Rule, and the Disinfection Byproducts Rule. More information on these can be found in the EPA literature.



Since many small water systems have found it difficult to operate as a viable business, the most recent update to the Safe Drinking Water Act requires new systems to be built in compliance with all existing *and future* rules. Existing older systems must continuously improve their management and financial capability to assure their future ability to meet all regulatory rules, which the DEP has labeled “Capability Enhancement.” Strategic planning is an integral component of the system’s management. This changes the responsibility focus from the operator to the manager and governing body.



Federal funds administered by DEP provide for outreach and technical assistance providers to work with system governing boards and system managers, in addition to operator certification training.



If you have any doubt about your responsibilities under the SDWA, do not hesitate to contact EPA or DEP. They have staff that can help you better understand your responsibilities. DO NOT wait until you have a violation to start asking questions.



Let's take the time to complete a short exercise to see what you've learned.

SDWA Exercise 2

1. A _____ Violation poses an immediate threat to human health. The public should be advised within hours via broadcast media and newspapers.
2. A _____ Violation does not pose a direct impact to human health, and notification may not be required for months. Follow the directions of the regulatory agency.
3. A _____ Violation does not pose an immediate threat, but customers must be notified within a specific number of days to be determined by the regulatory agency.
4. Independent of any regulatory actions, a _____ may take civil action against a system for noncompliance after a 60 day notification of their intent to file the civil action.
5. Systems that use groundwater as their source must establish a _____ Protection Program.
6. The EPA can fine local water systems up to _____ per day if they ignore emergency orders.
7. Engineering and treatment techniques must be approved by the _____ agency. In Pennsylvania this is the _____.
8. Improving a system's management and financial capability to assure the future ability to meet all regulatory rules is known as _____.

Summary



The key points of this module are:

- Public water systems are charged with providing safe drinking water to their customers in compliance with the Safe Drinking Water Act, and requirements set forth by the EPA and DEP.
- Public water systems have specific monitoring and reporting, record keeping, and public notification requirements.
- There are over 100 substances regulated under SDWA, and more are added each year.
- Water system board members are accountable for their system's compliance.
- Consumer Confidence Reports (CCR) must be sent to all customers annually. Free software is available from the EPA to prepare them.
- Sanitarian field orders, DEP consent orders, civil lawsuits and criminal prosecutions are all means of enforcing SDWA regulations.
- Systems that use groundwater as their source must establish a wellhead protection program. Those that use surface water as their source have more stringent monitoring, filtration and disinfection requirements.
- Additional information can be obtained from EPA and DEP.
- Systems that do not stay on top of maintenance and fiscal obligations will find themselves at greater risk of being out of environmental compliance. A well managed, fiscally sound organization will have much greater capability to meet compliance requirements.

Resources and References



The following are references and resources you can use when you have questions:

The U.S. EPA's website www.epa.gov. Go to topics related to drinking water.

The PA DEP's website www.dep.state.pa.us, keyword "Drinking Water."

EPA guide, "Small Systems Guide to Safe Drinking Water Act Regulations"

Penn State Harrisburg Environmental Training Center, (717) 948-6388.

Sanitarians from your regional DEP office.

DEP Capability Enhancement Facilitators, contact Dennis Lee at the state DEP headquarters by calling (717) 772-4058.

RCAP Solutions, Don Schwartz, PA/NJ Program Manager, (814)861-6093.

National Environmental Training Center for Small Communities, located in Morgantown, WV. Phone (800)624-8301.
www.netc.wvu.edu.

NETCSC's "Managing a Small Drinking Water System: A Short Course for Local Officials"

The complete list of training modules includes:

- Module 1, Water Supply System Basic Operations
- Module 2, Responsibilities of Governing Boards

- Module 3, The Safe Drinking Water Act
- Module 4, Dealing with Consultants, Technical Assistance Providers, Regulators, and Funding Agencies
- Module 5, The Basics of Accounting and Finance for Small Water Systems
- Module 6, Business Planning for Small Water Systems
- Module 7, Budgeting and Capital Improvements Planning Overview for Small Water Systems
- Module 8, Rate Design Overview for Small Water Systems
- Module 9, Bidding, Purchasing, and Leasing
- Module 10, Project Management Overview for Small Water Systems


Appendix A: Classification of Water Systems Handout

Classification of Water Systems

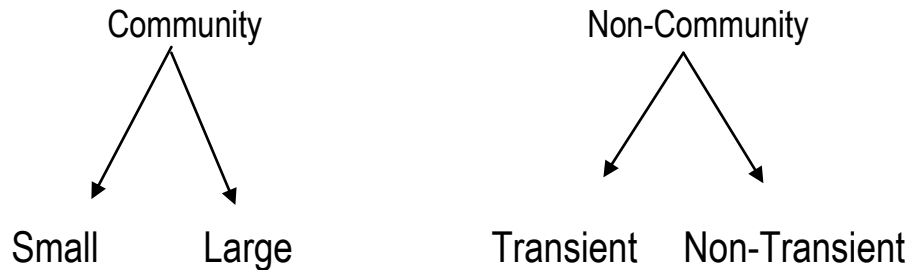
Purpose of Classification

Different types of water systems have different treatment requirements. Water systems are classified on this basis. Regulatory requirements vary from one class to another, and operator certifications are specific to certain classifications of systems.


Definition of Public Water Supply System

-  US-EPA defines a **Public Water Supply System** as “a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year.”

Water System Classifications



Community or Non-Community

-  A **Community Water System** is defined by US-EPA as “a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year round residents.” Examples include:

- Municipally owned and operated water systems
- Systems owned and operated by authorities
- Investor owned water systems, such as Pennsylvania-American Water Company, United Water, and Philadelphia Suburban
- Privately owned systems serving residential developments or manufactured housing communities



A **Non-Community Water System** is a public water system that serves at least 25 people, but doesn't serve them continuously year round.

Non-Transient or Transient

Non-community water systems are further broken down into Transient and Non-Transient systems.



A **Non-Transient Water System** is defined by US-EPA as “a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year.”



A **Transient Water System** is defined by US-EPA as “a non-community water system that does not regularly serve at least 25 of the same persons over 6 months per year.”

Size Classifications of Community Water Systems



Small Water Systems - water systems that serve 3,300 persons or fewer.

- Small water systems are not required to meet all the same requirements as larger systems. Most of the differences relate to frequency of sampling and testing for some contaminants.
- Small systems may also be eligible for special assistance from US-EPA and groups like the American Water Works Association (AWWA) to help them meet their needs with the limited resources generally available to small systems.



Generally, water systems that serve more than 3,300 people are classified as **Large Water Systems**. For certain specific regulations, a system must serve more than 10,000 people to be considered a “Large Water System.”

- Large water systems have to meet more stringent monitoring requirements under certain regulations.

Appendix B: Walkerton, Canada Waterborne Disease Outbreak Timeline

2000

May 12: Torrential downpour washes bacteria from cattle manure into shallow town well.

May 17: Residents complain of bloody diarrhea, vomiting, cramps, fever -- symptoms of E. coli poisoning.

May 18: Tests of water sampled May 15 reveal E. coli contamination. Water manager Stan Koebel fails to notify public or public health office.

May 19-21: Hundreds fall ill; Koebel does not mention knowledge of E. coli in water to health authorities.

May 21: Public health unit begins independent water testing, issues boil-water advisory.

May 22: First death directly linked to E. coli.

May 23: Health unit tests reveal water contaminated with deadly E. coli O157:H7. Two-year-old girl dies, more than 150 people seek hospital treatment, another 500 complain of symptoms.

May 24: Medical officer of health, Dr. Murray McQuigge, declares E. coli outbreak Canada's worst. Two more die.

May 25: Fifth person dies. At least four children in critical condition. McQuigge declares tragedy preventable. Outside agency takes over water system. Stan Koebel leaves town, goes on sick leave.

May 26: Tory Premier Mike Harris denies government cuts to blame for tragedy, points finger at changes made by previous NDP government. Proposed class-action lawsuit launched. Provincial police begin probe.

May 29: Sixth death. Province admits knowing for six years water system flawed; announces new rules to protect drinking water.

May 30: Seventh death.

May 31: Under opposition pressure, Harris orders public inquiry.

June 2: Federal, provincial governments announce financial aid for those affected by outbreak.

Aug. 26: New drinking-water laws take effect.

Oct. 16: Public inquiry under Justice Dennis O'Connor begins.

Nov. 15: Water utility's secretary-treasurer tells inquiry that Stan Koebel believed townspeople had food poisoning or flu.

Nov. 16: Province says Walkerton's water clean, but leaves it to health unit to lift boil-water advisory.

Nov. 17: Koebel resigns with \$98,000 severance package.

Nov. 30: Mayor David Thomson bursts into tears at inquiry, recalling when he learned Stan Koebel withheld crucial information that might have curtailed the tragedy.

Dec. 5: Health unit lifts boil-water advisory.

Dec. 6-7: Frank Koebel, water foreman and Koebel's brother, stuns inquiry with testimony about drinking on the job and routine falsification of safety tests and records.

Dec. 18-20: Stan Koebel testifies about his reasons for falsification of safety tests and records, and why he didn't alert authorities to E. coli in water.

2001

Jan. 15: Court begins hearing request to certify class-action suit.

Feb. 1: Tentative settlement reached in class-action suit. Province admits no liability but guarantees compensation plan.

March 19: Judge gives final approval to class-action settlement.

March 27: Province picks up \$15 million tab for fixing town's water.

April 23: Walkerton council agrees to pay Stan Koebel \$82,000 for severance and vacation plus \$5,000 in legal costs.

May 1: Deadline for opting out of class action passes. No one does.

May 20: Memorial service held commemorating anniversary of boil-water advisory.

June 17: Governor General Adrienne Clarkson pays tribute to victims by unveiling a memorial stone on a fountain.

June 25: Dr. Richard Schabas, former medical officer of health, testifies he repeatedly told the government that funding cuts would compromise public health.

June 26: Brenda Elliott, former environment minister, tells inquiry that the government acted as a team when making decisions around funding cuts.

June 27: Norm Sterling, also a former environment minister, testifies he was assured by his senior bureaucrats that any risks to public health caused by layoffs and budget cuts were manageable.

June 29: Premier Mike Harris testifies he was never warned of risks to human health posed by funding cuts to the Environment Ministry.

July 3: Inquiry faces first challenge when three local Environment Ministry officials argue

judge has no right to find fault with their conduct. Judge dismisses challenge.

Aug. 15-27: In closing submissions, lawyers defend their clients, with government blaming Stan Koebel for tragedy and Koebel saying blame must be spread.

Aug. 27: Inquiry wraps up Walkerton hearings.

2002

Jan. 14: O'Connor hands report to government.

Jan. 16: Some details of the report are leaked to The Canadian Press.

Jan. 17: The Ontario government announces it will release the first part of the report on Jan. 18, 2002, four days ahead of schedule, because of the leak. Attorney General David Young says he has asked the Toronto police force to investigate the leak.

Jan. 18: The report is released in Walkerton. It says the chain of events that led to the disaster began with Stan and Frank Koebel, two brothers responsible for the town's water, and was compounded by government budget cuts that undermined the ability of the Ministry of the Environment to pick up on the brothers' shortcomings.

Nov. 23: An arbitrator awards former public utilities foreman Frank Koebel a \$55,000 compensation package by the municipality for his job loss.

Dec. 22: Ontario study finds half of provincial water plants are still violating safety laws implemented after tainted water tragedy.

2003

April 23: Twelve criminal charges announced against brothers Stan and Frank Koebel.

Premier Harris announces a public inquiry into the affair—not the proposed legislative inquiry, + police investigation. **"I am a politician, and since I am ultimately responsible and accountable, it's hard to take it out of my hands,"**
Premier Mike Harris