F-BDL

# BACKFLOW DISASTER LURKS

Birmingham News
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Birmingham, Ala. Friday, Oct. 10, 1986
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## Lacey's Chapel residents burned by contaminated water supply

Water

story was written by News
er Susan Cullen with
News staff writers

From Page 14

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...e of the early samples taken ...high" pH levels, said ...enior public health ...Jefferson County ...Health ...each ...day ...fe.

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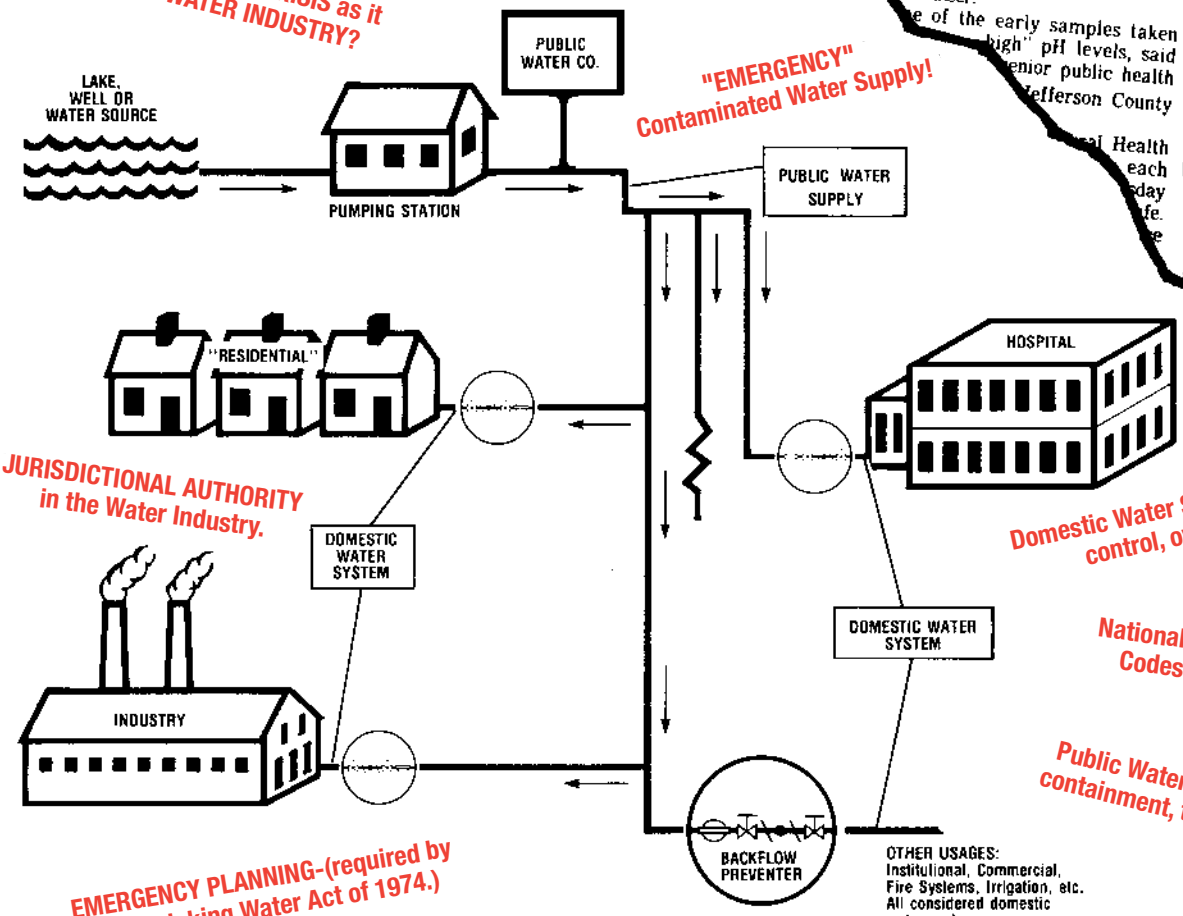
...when you get in your own

*J.R. Isbell was covered with blisters*

**Every individual in the water industry must be informed on the following!!!**

What is the INSURANCE CRISIS as it relates to the WATER INDUSTRY?

"EMERGENCY" Contaminated Water Supply!



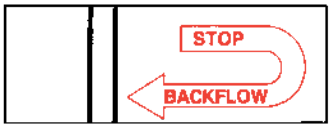

JURISDICTIONAL AUTHORITY in the Water Industry.

Domestic Water Supply & cross-connection control, owner's responisblity.

Nationally Recognized Model Plumbing Codes & Domestic Water Systems.

Public Water Supply and total containment, the only recourse.

EMERGENCY PLANNING-(required by Safe Drinking Water Act of 1974.)




WATTS REGULATOR COMPANY • North Andover, MA 01845

## INSURANCE CRISIS IN AMERICA BRINGS NEW MEANING TO THE WORDS "Reasonable Care" AS IT RELATES TO THE WATER INDUSTRY.

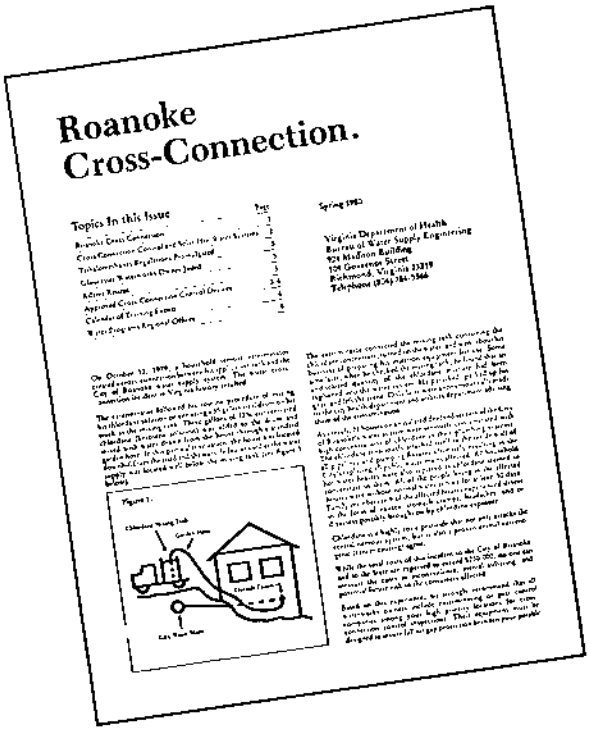
### Water Industry to Define Jurisdictional Boundary

**The insurance crisis in America makes it vitally important for the Water industry to define the limits of their system. Protect that system, educate the users of that system and keep records of their efforts. This initiative is summed up as taking "Reasonable Care"** to protect the product water.

Cases like Lacey's Chapel, Alabama continue to happen and naturally our attention is drawn toward our liability and the insurance coverage available. Many insurance subscribers are finding little or no coverage available, most with exclusion riders. What to do then?

The Public Water Supply is protected from backflow when a **"total containment control program"** has been implemented. The domestic water system is protected when a **"cross connection control program"** is implemented as required by plumbing code. These efforts by Public Water suppliers and owners are the minimum requirements for safe drinking water and demonstrate **"Reasonable Care."**

Now that insurance protection is being restricted for pollution and contamination, a backflow incident could result in an economic disaster for the Public Water Supply principals or Domestic Water System owners. **Therefore, backflow prevention devices are more important than ever to protect the potable water from hazards of cross-connections and to establish jurisdictional boundaries.** (see page 7)



Roanoke
Cross-Connection.

Topics In this Issue

Spring 1983

Virginia Department of Health
Bureau of Water Supply Engineering
109 Governor Street
Richmond, Virginia 23219
Telephone (804) 786-5566

## "Pollution Exclusion Rider"

Having paid huge settlements for cases involving pollution and contamination in drinking water, **the insurance industry regards the water industry as volatile, uncontrollable and high risk coverage by nature.** It appears insurance companies view the water industry as one large group including both Public Water Supply and Domestic Water Systems.

The resulting unpredictable expensive settlements for injury or death and undeterminable costs for cleanup and repair of contaminated water supply systems has caused **insurance coverage to be restricted or raised to prohibitive cost levels** (see General Endorsement page 3).

The insurance crisis is vitally important and should be freely discussed with all Public Water Supply officials who are responsible for the distribution of drinking water and also building owners who are distributing that same water in Domestic Water Systems. Education will prevent the need to know the serious financial consequences should a backflow incident occur, and amplify the importance of backflow-prevention devices.

1. All insurance policies should be reviewed for the "Absolute Pollution Exclusion".
2. All cross-connections need to be protected with backflow prevention devices. (cross connection control)
3. Public water supply must be distinctly seperated from the domestic water supply. (total containment control)

# GENERAL ENDORSEMENT

Name of person or organization insured _____

Date this endorsement takes effect _____

Policy number _____

Name of company issuing this endorsement _____

(We will not fill in the above unless we issue this endorsement after we issue your policy)

## ABSOLUTE POLLUTION EXCLUSION ENDORSEMENT

In Part VI, Liability Claims; We Won't Cover Section of your policy, the section titled Pollutants and Contaminants is deleted and replaced with the following:

## ABSOLUTE POLLUTION EXCLUSION

We won't protect you against claims or suits arising out of or in any way related to pollution, regardless of the type of pollution or by whom the pollution was caused. Nor will we protect you against any cost or expense arising out of or in any way related to any governmental demand or request that you test for, monitor, clean up, remove, contain, treat, detoxify, or neutralize the pollution.

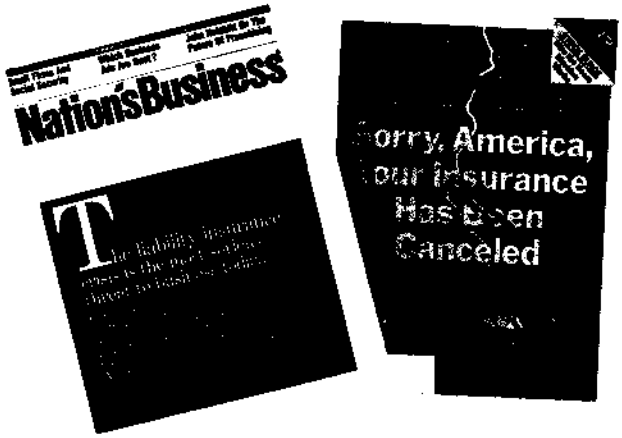
Pollution means the actual or potential introduction into the environment of any substance which causes or the presence in the environment of any substance which causes or threatens to cause contamination or any unclean, unsafe or unhealthful condition, or which causes or threatens to cause harm or injury to animals or threatens to cause harm or injury to animals or plant life.

Environment includes land, water, (including underground water or water table supplies), air or any other natural feature of the earth or its atmosphere, whether or not altered, developed or cultivated.

We have no duty to defend you in connection with any claim or suit which seeks, in whole or in part, damages or any other relief arising out of or related in any way to pollution.

Accepted By: _____
Insured

_____
Title



# "EMERGENCY"
# Contaminated Water Supply!!

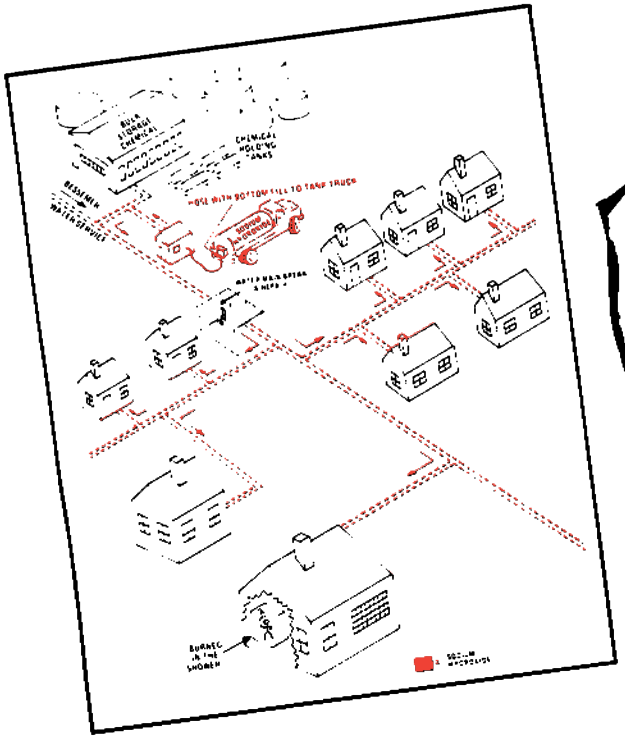
A review of the Lacey's Chapel backflow case is extremely important (pages 5 and 6).

Mr. J.P. Isbell became a victim along with 150 other residents of Lacey's Chapel, Alabama. The ultimate cost to innocent water consumers has not yet been determined. **Ironically, this incident would not have happened had the existing plumbing codes been enforced (a backflow preventer at all cross-connection,** Section 1003, page 13 provides a typical example).

Domestic Water Systems can have many unprotected cross-connections and therefore, there is a definite need for the Public Water Supply to install a containment control device (backflow preventer) at the water meter or service entrance of each Domestic Water System that is services.

The Lacey's Chapel incident should be used to exemplify the extreme importance of plumbing codes and the enforcement of cross-connection control programs, requiring installation testing and maintenance of backflow-prevention devices as well as Water Utility containment control backflow-prevention programs.

Backflow prevention devices provide dual purpose, vital protection for both the health and welfare of all consumer/users of the water industry, plus help avoid economic disaster for those responsible due to unavailable insurance protection.



...icials believe was sodium ... oxide.
It is not clear how the chemical got into the water, but the incidents began after an 8-inch water main feeding Lacey's Chapel from the Bessemer Water Service broke and was repaired Wednesday afternoon, officials said. One Water Service workman suffered leg burns from some undetermined chemical while repairing the water main and required medical treatment, said Joe Powers, chief of the Water Supply Branch of the Alabama Department of Environmental Management.

After ...

**SEE "EMERGENCY PLANNING" Pages 8 and 9**

SOUTH FINAL

# The Birmingham News

99th Year—No. 210 | 92 Pages — 4 Sections | Birmingham, Ala., Friday, Oct. 10, 1986 | Contents copyrighted 1986 © The Birmingham News Company | Price: 25 Cents

# Lacey's Chapel residents burned by contaminated water supply

**This story was written by News staff writer Susan Cullen with reports from News staff writers George Vlahakis and Jeff Hansen**

J.R. Isbell jumped in the shower at 5 a.m. Thursday and soaped up. When he got out of the shower, his body was covered with tiny red blisters.

It was while he was scrubbing his face that he began to hurt.

"The more I rubbed it, the worse it got," the 60-year-old Lacey's Chapel resident said. "It looked like someone took a blow torch and singed me."

By 5:50 a.m., he was in Bessemer Carraway Medical Center's emergency room. The doctors thought he'd had an allergic reaction to his soap, but Isbell said he knew it was something in the water.

"I've been using that bar of soap for a week, and if I was going to have an allergic reaction, I would have had it before now," he said.

Isbell said he was burned by a mysterious chemical contamination of the Bessemer water system.

He and several Lacey's Chapel residents received medical treatment Thursday after their water system apparently was contaminated by what officials believe was sodium hydroxide.

It is not clear how the chemical got into the water, but the incidents began after an 8-inch water main feeding Lacey's Chapel from the Bessemer Water Service broke and was repaired Wednesday afternoon, officials said. One Water Service workman suffered leg burns from some undetermined chemical while repairing the water main and required medical treatment, said Joe Powers, chief of the Water Supply Branch of the Alabama Department of Environmental Management.

After Lacey's Chapel residents complained Wednesday night and early Thursday, the water system to Lacey's Chapel was shut down at 7 a.m. Thursday, officials said. Service was being restored late Thursday night after the water lines were flushed, officials said.

■ See **Water,** Page 16A

## Water

■ From **Page 1A**

Powers and ADEM officials said they were not sure what caused the contamination by what they believe was sodium hydroxide, a caustic soda. Powers said a possible source of the contamination is the nearby Thompson-Hayward Chemical Co., which is on the same water line as Lacey's Chapel.

Powers said the branch manager of Thompson-Hayward, G.R. Hutchins, had told him that when the water main broke, a truck driver was adding water to a tanker truck that had carried sodium hydroxide.

Hutchins told Powers that it is normal procedure to add the water from the top of the tanker.

"But unfortunately, the driver was filling it from the bottom," Powers said. As soon as the driver realized that water was no longer going into the truck (because of the falling pressure due to the break in the water main that happened at the same time), he closed the valve, Powers said.

He said that "we speculate" that some of the sodium hydroxide solution in the truck flowed backward into the water main before the driver noticed.

Powers said ADEM is not attempting to assign blame now. "We're just cleaning up the mess," he said.

He said water samples are also being analyzed to see if any heavy metals tainted the water.

"We can't just simply assume it was caustic soda," he said.

Hutchins, at Thompson-Hayward, said the matter is being investigated, and he had no comment Thursday.

Thompson-Hayward distributes chemicals such as sodium hydroxide and does not produce them at its plant, said Jack W. Lovell, a 17-year employee and former plant manager who is no longer with the company.

Sodium hydroxide is brought to the plant in liquid form and is not diluted at the plant, Lovell said. It goes into a holding tank and then is pumped into 55-gallon drums, he said.

Runoff and spills are placed in a holding pond where the chemicals are neutralized, Lovell said. Samples are taken along the perimeter of the pond and tested for chemical leaks.

"In seven years, there wasn't anything but pond water or good old creek water," he said, adding that the water system "certainly wouldn't be attached to any tank or any facilities that are holding chemicals."

Measurements of the pH of the contaminated water were as high as 13 in some sections of the pipe, Powers said. The pH scale, a measure of acid or alkali, runs from 1 to 14; 1 indicates strong acid, 14 indicates strong alkali and 7 is the pH of pure water. An example of a strong alkali is lye or drain-cleanser.

Some of the early samples taken showed "very high" pH levels, said Clyde McBee, a senior public health engineer with the Jefferson County Health Department.

McBee was one of several Health Department officials checking each house in Lacey's Chapel on Thursday night to make sure the water was safe. Earlier, the Bessemer Water Service had flushed out all of the mains. At each house, officials made sure all of the inside pipes were flushed out, then checked the pH level of the new water coming in, McBee said.

He said all of the homes were being placed back on the water system Thursday night.

Lacey's Chapel residents Fred and Francis Ross said they noticed the water was bad Wednesday night right after the main was repaired.

"It bubbled up and looked like Alka Seltzer," Ross said. "I stuck my hand under the faucet and some blisters came up."

Ross said he immediately called the Bessemer Water Service, but the water was still contaminated the next morning. "I stuck my finger in it and touched my tongue, and it burned me, like coffee burns your tongue," Mrs. Ross said.

Ross said one neighbor's head was covered with blisters after she washed her hair Thursday morning. Others complained of burned throats or mouths after drinking the water.

"I tell you, though, in my 60 years,

*J.R. Isbell was covered with blisters*

I've never run into anything quite like this," Isbell said.

"It's bad when you get in your own shower and get burnt up."

# Lacey's Chapel residents wary of water

By **Susan Cullen**
News staff writer

**Some Lacey's Chapel residents still are hauling drinking water and bathing elsewhere despite assurances from health officials that the water is safe a week after the system was contaminated with sodium hydroxide.**

Mary M. Hill said her family has been bathing at her daughter's home in Vestavia Hills every day, and bringing back water for cooking and drinking.

The Jefferson County Health Department official who checked the water in her home last week told her that even though the water had an acceptable pH level, he wouldn't drink it until the Alabama Department of Environmental Management says it is safe.

Keith Lowery, ADEM's chief of community water systems, said Tuesday that Lacey's Chapel water is safe.

The contaminated water was flushed from the Bessemer mains Oct. 9. At each house, health officials made sure all of the inside pipes were flushed, and then checked the pH level of the new water coming in.

Measurements of the pH of the contaminated water were as high as 13 in some places, according to Joe Powers, chief of ADEM's Water Supply Branch.

The pH scale, a measure of acid or alkali, is from 1 to 14. One indicates strong acid, 14 indicates strong alkali, and 7 is the ideal pH of safe drinking water. Sodium hydroxide is a strong alkali, as is lye or drain cleaner.

POWERS SAID a possible source of the contamination is the nearby Thompson-Hayward Chemical Co., which is on the same waterline as Lacey's Chapel.

Powers said the branch manager of Thompson-Hayward, G.R. Hutchins, told him that when the main broke a truck driver was adding water to a tanker truck that had carried sodium hydroxide.

Hutchins told Powers that it is normal procedure to add the water from the top of the tanker.

"But unfortunately, the driver was filling it from the bottom," Powers said. As soon as the driver realized that water was no longer going into the truck because of the falling pressure due to the break in the main, he closed the valve, Powers said.

ABOUT 150 Lacey's Chapel residents met with a Bessemer lawyer Monday night at Shady Grove Baptist Church, Mrs. Hill said. She said many residents expressed fear that the water still is contaminated.

"They (the Bessemer Water Service and health officials) won't come out and tell us plain," she said, adding that residents want the water agency to bring a tanker of water to the community.

Lowery said that ADEM would make sure a tanker is brought to Lacey's Chapel if he believed the water wasn't safe. "But there's no reason for the tanker," he said. "The existing water supply is satisfactory."

Mrs. Hill said water service workers flushed out the main in her front yard Tuesday, and she wondered why they would do that if the water is safe.

Herbert W. Dabbs, superintendent of the Bessemer Water Service, said officials did it to make her feel better. "We did it just to try to pacify everybody," he said.

Mrs. Hill said some residents have been checking their own water, and getting readings of 8.7 to 8.9.

If those numbers are correct, they are within an acceptable range, but a little high, said Clyde McBee, a senior public health engineer with the Jefferson County Health Department.

"We have not seen anything to indicate that the water isn't safe," McBee said.

Residents at the meeting also were concerned that contaminated water still was hidden in the pipelines, Mrs. Hill said, but McBee said he doesn't see how that could be possible. The water was flushed from the lines, he said, and because it is a continuous flow there shouldn't be any pockets of the contaminated water left in the system.

**To get rid of hidden contaminated water in their homes, residents were told to throw away ice cubes and flush water from their garden hoses, McBee said.**

**Several Lacey's Chapel residents received medical treatment for chemical burns after the sodium hydroxide entered the water. Mrs. Hill suffered burns on her arms and a sore in her mouth after drinking the water Oct. 9.**



Thurs., Oct. 16, 1986
The Birmingham News
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# JURISDICTIONAL AUTHORITY IN THE WATER INDUSTRY
## (Must be defined in the Contract)

To the layman, the water industry is one large piping system that brings water from the source; all the way to the last tap, faucet, or valve, anyplace, anytime someone wishes to drink, wash, or bathe in that water. This water is supplied with an assumption that it is safe - step right up and drink! This is NO LESS than an implied warrantee.

But - the water industry is not one "big" piping system. **It consists of two distinct identities.** They are the **Public Water Supply** and the **Domestic Water System.** Since case after case of pollution and contamination manifest themselves due to the lack of enforcement of plumbing codes or economics which result in "do-it-your-selfers," and owners who are generally uninformed about backflow creating cross-connection hazards, consequently the Domestic Water Systems prove to be potentially and extremely dangerous. Likewise, the Public Water Supply that has allowed the Domestic Water System to "tie in to it" without protection is "suspect" and very likely will become polluted or contaminated when backflow from a Domestic Water System may occur.

**It's imperative that the two systems be identified and jurisdictional authority be established?**

Only one method is proven and provides the autonomous seperation desired: **containment programs:** a backflow-prevention device at each water meter and service entrance. This program is recommended practice by the American Water Works Association (pages 14 and 15).

**"Total containment" limits the water purveyor's responsibility from the source of supply to the consumer's service-connection.**

Some Public Water Supply Systems failed to define the terms of the actual contract such as their jurisdictional authority. Therefore, indicating full acceptance of the responsibility for the water all the way to the tap or valve or faucet on the far extremes of the consumer's Domestic Water System. While some purveyors of water have begun "hit or miss" programs where "high hazards" customers such as hospitals become contained at the meter and other customers are tied in without containment. The very idea indicates an inconsistency and establishes doubt as to the effectiveness of your backflow program. This disparity indicates, "I do not accept the domestic plumbing in buildings A-B-and C (such as the hospital) and therefore require containment at the water meter." Conversely no containment valve indicates full acceptance of the consumers domestic water system! This lack of containment can indicate "I accept status Quo-the conditions in the domestic systems are safe enough". Remember it is the policy of the water purveyor to tie in with protection or without protection and he can be held culpable for his actions or lack of actions.

Remember we are dealing with people - human beings, who deserve the very safest service we can provide. If the water purveyor is not responsible for the maintenance of miles and miles of the owner's piping, then he is compelled to make this clear to the owner. The water purveyor must say it in many ways. Since it would be impracticle to put up signs that say "Drink at your own risk" then the water purveyor is compelled to use other more positive actions such as:

A. Define: Define his responsibility in the actual contract.
B. Protect: Install a backflow-prevention device **(containment)** to seperate the two systems. Remember, water is like the ocean tide, it can flow in and out.
C. Educate: Notify the consumer or owner in writing that the installation of this **containment device established jurisdictional authority,** that the owner has the responsibility for the Domestic Water System. Cite the Local Plumbing Code "Maintenance" (page 13).
D. Record: Establish a suitable maintenance program including testing and record keeping for each and every containment device.

Finally: The water purveyor may assist the consumer with identification of cross-connections and proper protection utilizing backflow prevention devices. Keep in mind that unless you are an authority, i.e., plumber or plumbing inspector, it's unadvisable to take full responsibility for this type of Domestic Water System survey! Perhaps you could refer this task to the plumbing trade.

Owners should look to Local Health Departments for assistance with records keeping for the valves they own.

# EMERGENCY PLANNING
## As Required by the Safe Drinking Water Act of 1974

Certainly we all agree that backflow can cause an emergency!

What will have to be done to supply safe drinking water in an emergency and what will it cost?

Do you have a safe drinking water emergency plan?

Does your state have an emergency plan?

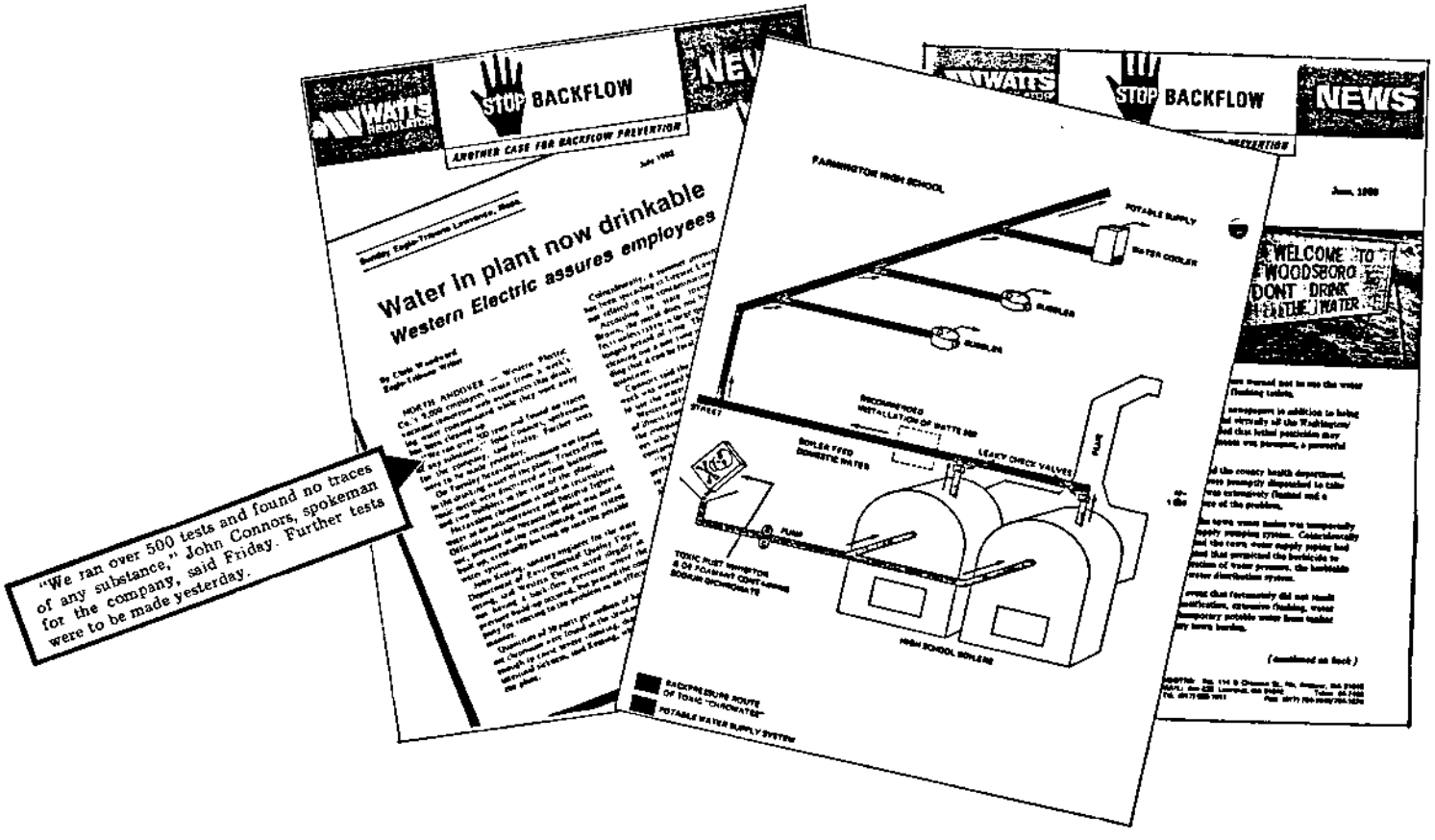
It is a little known fact, but **48 states have accepted primacy for the enforcement of the Federal Safe Drinking Water Act, and therefore must have prepared an emergency plan** ("an adequate plan for supplying safe drinking water under emergency circumstances". Bullet 4 page 9).

**Where is your state's emergency plan? Who is responsible for your state's emergency plan?**

Do you realize that state health officials, or representatives from the State EPA or equivalent, can arrive on the scene of a backflow incident and "take charge" - calling shots such as emergency water tanker trucks costing as much as $500 dollars per day, for days at a time? Who pays for this? You do! Water samples which require chemical analysis, in North Andover - 500 samples. Who Pays? You do! In Virginia, rip out the pipe line and replace it. Who pays? You do! All decisions seem to be made shooting from the hip by state and/or federal officials and you must comply, with no say in the matter, because you have no emergency plan of your own. Neither does the state, in most cases, but they make you believe they know what they're doing.

By reading page nine, the boldface sections spell out that each state must have a plan. **"Please show us the plan, our risk manager wants to analyze our potential risk!"**

Who knows we may just decide to write our own plan!




# THE SAFE DRINKING WATER ACT of 1974

# HIGHLIGHTS

U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
July 1975

**The Role of the States Under the Act**

A State can continue to enforce its own laws and regulations governing drinking water supplies until the national interim primary regulations go into effect in December 1976, two years after enactment of the law.

When requirements for review of State programs (prescribed in State program regulations finalized within nine months after passage of the Act) are established, a State can qualify for primary enforcement responsibility if it meets these conditions:

Act) are established, a State can qualify for primary enforcement responsibility if it meets these conditions:

- It adopts regulations that are at least equal to the Federal regulations in protecting public health;
- It adopts and implements adequate surveillance and enforcement procedures;
- It provides variances and exemptions (if it chooses to provide these) that meet Federal requirements;
- It provides an adequate plan for supplying safe drinking water under emergency circumstances;
- It keeps records and provides reports keeping EPA fully informed of its activities.

Whenever a public water system in a State with primary enforcement authority does not comply with a primary regulation or a schedule imposed with a variance or exemption, EPA is directed by the Act to notify the State and to provide advice or technical assistance in an effort to bring about compliance. If noncompliance continues beyond a 60-day grace period, Federal action may be taken. EPA also may begin enforcement at the request of a Governor or a responsible State agency. In a State without primary enforcement authority, EPA may take direct civil action. Whoever the designated authority (State or EPA), a maximum penalty of $5,000 a day may be imposed for willful violation.

EPA may hold public hearings upon petition of the State, the public water system, or a person served by the system, in order to assist the State in carrying out the primary enforcement role.

On the community level, a public water supply must give notice to its consumers if it:

1. Fails to meet a primary drinking water regulation;
2. Fails to perform required monitoring;
3. Has a variance or exemption;
4. Fails to comply with a schedule imposed with a variance or exemption.

The notice must be given at least every three months in newspapers of general circulation, and must be included in customers' water bills. Other communications media must also be notified.

## DOMESTIC WATER SUPPLY AND CROSS-CONNECTION CONTROL
### The Owner's Responsibility

**"Contaminants added to the water by circumstances under the control of the consumer are not the responsibility of the supplier of the water."** (Public Water Supply) (Federal Register, Vol. 40, No. 248, page 11.)

In a court case, this could mean that **the property owner is liable for any injury resulting from a backflow incident under his control.** When it comes to who is responsible it could be very costly for any property owner controlling a Domestic Water System. This responsibility could even cover injuries/damages that occur outside of the property owner's building. Remember that **contamination of the Public Water Supply, caused by a backflow incident, reverts back to the source of cross-connection.**

The Public Water Supply may be judged negligent if an incident involving pollution or contamination occurs affecting the Public Water Supply and consequently affecting innocent consumers who depend on that Public Water Supply. This is especially true **if the source of introduction is found to be a cross-connection in his customer's Domestic Water System and no action was taken, by the water purveyor to protect the Public Water Supply.**

---

The "state of the art" in backflow prevention by Public Water Supply officials must include:

**A.** Educational programs for all water customers focusing on water safety, primarily cross-connection control and adherence to plumbing codes.

**B.** A comprehensive total containment program with installation, testing and maintenance.

**C.** Recognition and support of one or more training facilities for Backflow Prevention Device Certified Testers.

Failure to opt for safety over chance by Public Water officials, whether they are directors, commissioners, or investors, could be considered criminal depending on the resulting damages. The probability of criminal responsibility increases in light of the current knowledge on backflow prevention, rules, regulations, training and safety equipment presently available.

Remember, whether you are a property owner faced with cross-connection control, or a water purveyor faced with total containment, **drinking water safety is imperative and no one in the water industry can be allowed to ignore the mechanics and hydraulics of water safety.**

OFFICIAL DOCUMENT

For your information, reprinted below is an excerpt from the National Interim Water Regulations:

FEDERAL REGISTER, Vol. 40, No. 248, Wednesday - Dec. 24, 1975

TITLE 40 - PROTECTION OF ENVIRONMENT
CHAPTER 1 - ENVIRONMENTAL PROTECTION AGENCY

Subchapter D - Water Programs
[FRL 464-7]

Part 141 - National Interim Primary Drinking Water Regulations

Point of Measurement

Other comments on maximum contaminant levels focused on the proposed requirement that such levels be tested at the consumer's tap. Concern was expressed over the inability of the public water system to control potential sources of contaminants which are under the control of the consumer.

The promulgated definition of "maximum contaminant level", Par. 141.2(d), retains the requirement that the maximum contaminant level be measured at the tap except in the case of turbidity, which should be measured at the point of entry to the distribution system. **However, the definition has been expanded to make clear that contaminants added to the water by circumstances under the control of the consumer are not the responsibility of the supplier of water,** unless the contaminants result from corrosion of piping and plumbing resulting from the quality of the water supplied. It should be noted, however, that this requirement should not be interpreted as to discourage local, aggressive cross-connection control measures.

## Nationally Recognized Model Plumbing Codes and the Domestic Water Systems

**Who is responsible for the safety of individuals depending on domestic plumbing systems?** Perhaps this is the best kept secret of them all.

**"The property owner."**

This includes residential, commercial, and industrial buildings, and/or homes, hospitals, and factories.

**"But no one ever told the owner."**

**It is apparent in studying the example displayed on page 13 that the Plumbing Code controls cross-connections (Section 1003). This is true in all regions of this country and further, it clearly places the responsibility for the entire Domestic Water System in the hands of the owner - but no one ever told the owner about this!** What an unfortunate oversight. It is imperative that the owner be appraised of this responsibility.

Plumbing Codes in general are vague regarding the inspection, testing, and maintenance records required for installed backflow devices. This vagueness however, does not let the owner off the hook. As stated, maintenance is the owner's or his agent's responsibility, and the plumbing must be maintained in a sanitary and safe operating condition. Let's suppose a property owner turns to a typical Plumbing Code, what will he find?

**B.O.C.A. P-1515.11 Inspection of Devices:** "Periodic inspections shall be made of all backflow preventers to determine whether they are in proper working condition. Reduced pressure principle backflow preventers shall be periodically tested."

What do they mean by "periodic inspections"? Who determines "proper working condition"? Where are the records kept that will protect the owner varifying the work has been done? Why write codes if you can't use them?

It stands to reason that **any claim for injury resulting from pollution or contamination in Domestic Water Systems will be the owner's responsibility.** Therefore, everyone in the water industry - the water purveyor, local and state health department employees, sanitarians and plumbing officials, must help educate the property owner. **Don't keep this a secret any longer!** We're all in this water industry together and need to remember:

**"Zero defects result in zero liability and safe drinking water."**

**Section 319 — Maintenance**

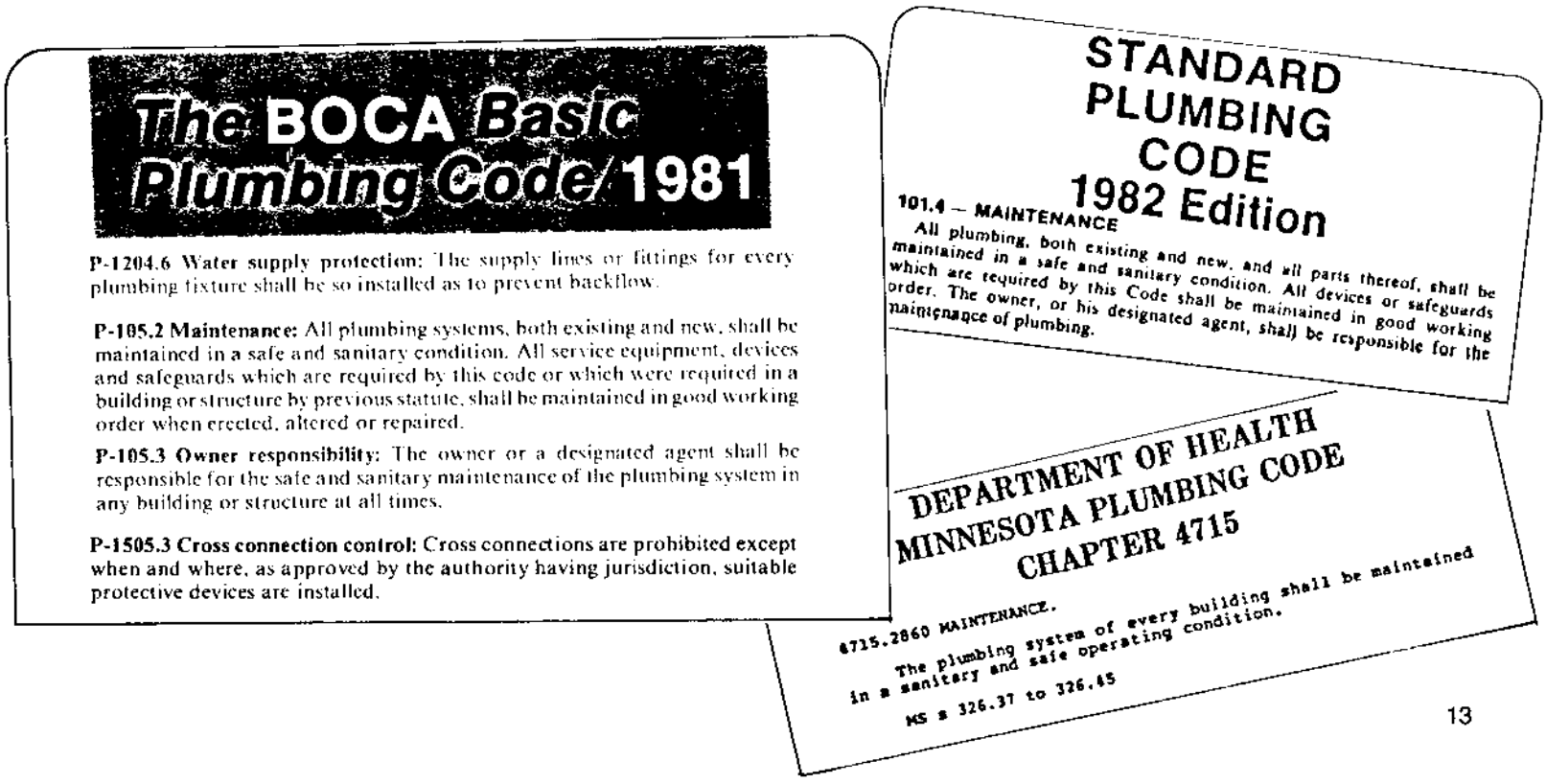
The plumbing and drainage system of any premises under the jurisdiction of the Administrative Authority shall be maintained in a sanitary and safe operating condition by the owner or his agent.

**Section 1003 — Cross-Connection Control**

No person shall install any water operated equipment or mechanism, or use any water treating chemical or substance, if it is found that such equipment, mechanism, chemical or substance may cause pollution of the domestic water supply. Such equipment or mechanism may be permitted only when equipped with an approved backflow prevention device.

**Approval of Devices —** Before any device is installed for the prevention of backflow or back-siphonage, it shall have first been approved by the Administrative Authority. Devices shall be tested in conformity with recognized standards or other standards acceptable to the Administrative Authority which are consistent with the intent of this Code.

All devices installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such devices. The Administrative Authority or other department having jurisdiction may inspect such devices and, if found to be defective or inoperative, shall require the repair or replacement thereof. No device shall be removed from use or relocated or other device substituted, without the approval of the Administrative Authority.



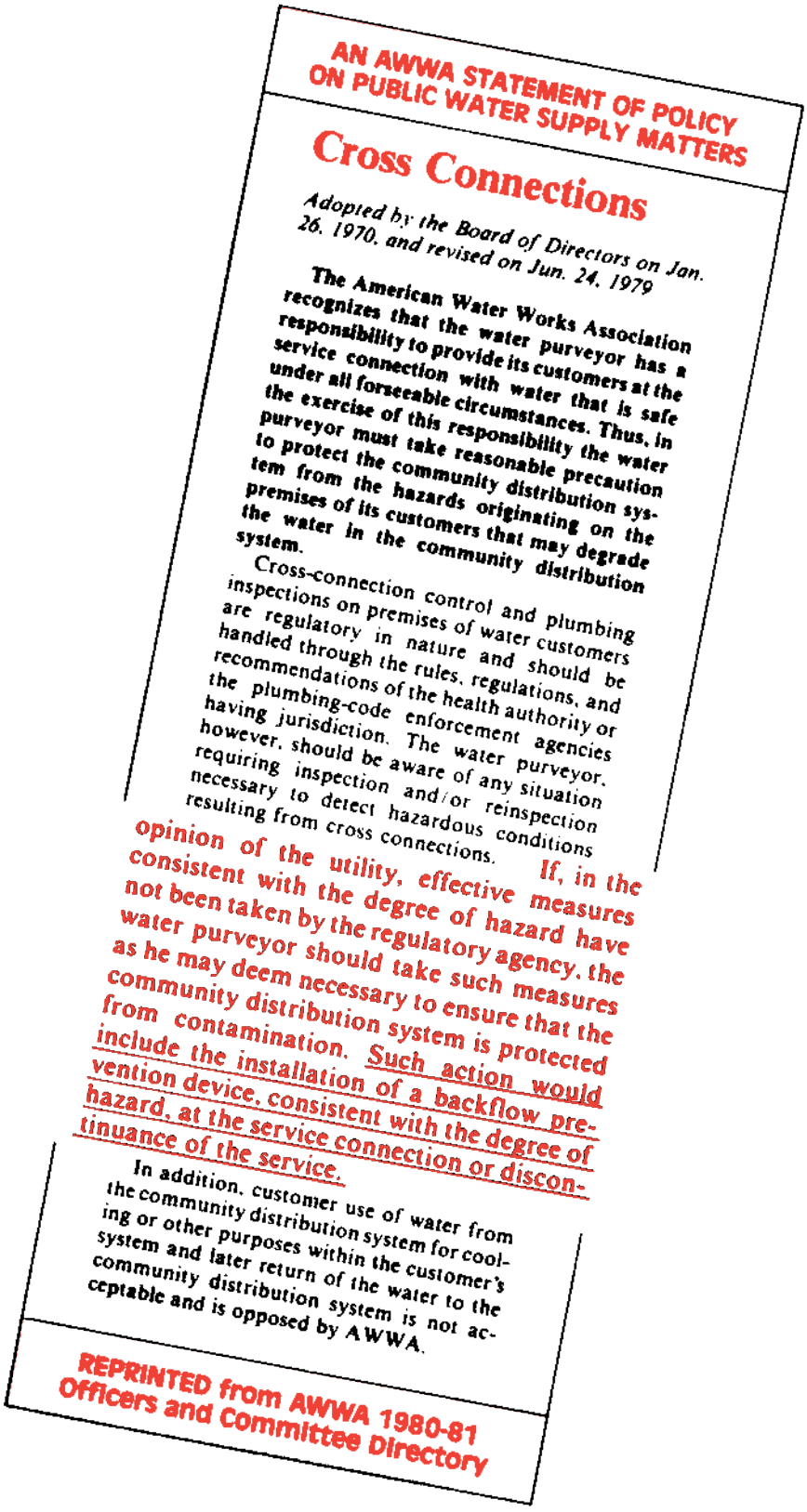
# PUBLIC WATER SUPPLY AND TOTAL CONTAINMENT
## The Only Recourse

It is a recognized fact that cross-connections are an integral part of the plumbing that makes up Domestic Water Systems. Such systems are controlled by the property owner. Consequently, **no Public Water Supply that is connected to a Domestic Water System is safe from cross-connection hazards unless it is protected by total containment** (a backflow-prevention device at every water meter/service connection). This is because **every Domestic Water System has the constant potential for cross-connection control deficiency, even after complying with all plumbing code requirements. A hazardous cross-connection can be created unknowingly by unqualified persons at almost any time.**

It is truly impossible for plumbing inspectors to police the Domestic Water System constantly for hazardous cross-connections. It is ridiculous to even consider that the Purveyor of the Public Water Supply enter into the field of policing Domestic Water Systems for cross-connections. We must conclude that Water Supply employees are generally not trained for this specialized work. Plumbing Inspectors and licensed Master Plumbers are more adaept in the art of cross-connection control. Responsibility in Domestic Water Systems safety truly belongs to the owners. Therefore, **total containment, as supported by AWWA (see page 15) is extremely important for all Public Water Supply Systems.** It is the answer, has been, and will be. A properly tested, maintained and logged backflow-prevention device at the service entrance of each domestic water service connection for residential, commercial, industrial, fire, and irrigation, is your best protection.

Protect new and existing Public Water Supply Systems now. **Don't allow your system to grow larger without total containment protection on all new Domestic Water System tie-ins.**

**Require retrofit installation of backflow preventers at all existing water meter or service entrances.** For further assistance and the latest information regarding what other cities and towns are doing about total containment or training seminars/small personalized workshops contact your local Watts Representative listed on Page 16.



AN AWWA STATEMENT OF POLICY
ON PUBLIC WATER SUPPLY MATTERS

# Cross Connections

*Adopted by the Board of Directors on Jan. 26, 1970, and revised on Jun. 24, 1979*

**The American Water Works Association recognizes that the water purveyor has a responsibility to provide its customers at the service connection with water that is safe under all forseeable circumstances. Thus, in the exercise of this responsibility the water purveyor must take reasonable precaution to protect the community distribution system from the hazards originating on the premises of its customers that may degrade the water in the community distribution system.**

Cross-connection control and plumbing inspections on premises of water customers are regulatory in nature and should be handled through the rules, regulations, and recommendations of the health authority or the plumbing-code enforcement agencies having jurisdiction. The water purveyor, however, should be aware of any situation requiring inspection and/or reinspection necessary to detect hazardous conditions resulting from cross connections. If, in the opinion of the utility, effective measures consistent with the degree of hazard have not been taken by the regulatory agency, the water purveyor should take such measures as he may deem necessary to ensure that the community distribution system is protected from contamination. Such action would include the installation of a backflow prevention device, consistent with the degree of hazard, at the service connection or discontinuance of the service.

In addition, customer use of water from the community distribution system for cooling or other purposes within the customer's system and later return of the water to the community distribution system is not acceptable and is opposed by AWWA.

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Officers and Committee Directory

**For additional information, visit our web site at: www.watts.com**

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