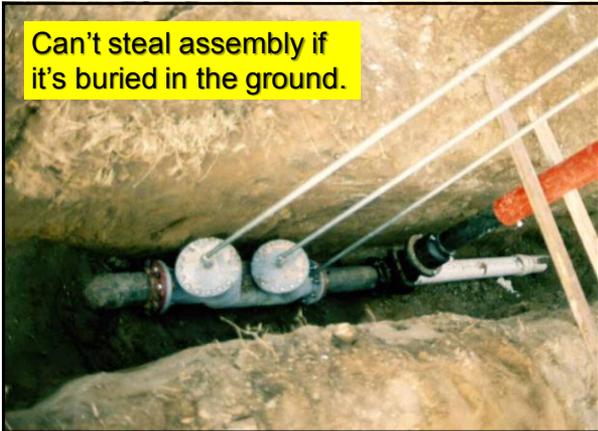


# Theft, Vandalism & Terrorism: How it Affects Your CCC Program

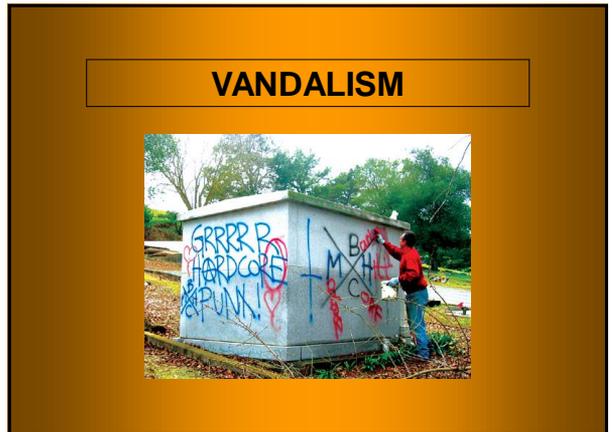
ABPA-Reno, NV  
May 2012  
Les O'Brien

## THEFT





*Cost to replace*  
*Interrupted water flow*  
*Contaminated water*  
*Small assemblies are usual targets*  
*Theft on the job before installation*





Kids like to play in the water

# Cross-Connections by Accident or On Purpose

15

## Alamosa water contamination blamed on animal waste

Posted: Nov 18, 2009 3:31 PM by Bea Karnes  
Updated: Nov 18, 2009 3:31 PM

<http://www.cdphe.state.co.us/wq/drinkwater/pdf/AlamosaInvestRpt.pdf>



Salmonella outbreak

March & April 2008

A salmonella outbreak in Alamosa last year that killed one person and sickened an estimated 1,300 was the result of animal waste contaminating a concrete in-ground water storage tank that had several holes and cracks. That's according to a final report issued Wednesday by the Colorado Department of Public Health and Environment.

Like  
Tweet 0  
SHARE  
Rating:

# TERRORISM

Homeland Security first focused on the water source such as reservoirs, etc.



# WATER CONTAMINATION ON TELEVISION



**Quincy M.E.:** Season 5, Episode 21  
**Deadly Arena** (27 Mar. 1980)  
 TV Episode - **TV PG** 60 min - [Drama](#) | [Mystery](#) | [Crime](#)

**Your rating:** ★★★★★★ ~/10  
 Ratings: 6.9/10 from 6 users  
 Reviews: 1 user

When three people wind up dead as a result of botulism poisoning, Quincy, along with Dr. Janet Carlyle of the health department... [See full summary](#) »

**Director:** [Jeffrey Hayden](#)  
**Writers:** [Sam Egan](#) (teleplay), [Robert A. Cinader](#) (story), and [3 more credits](#) »  
**Stars:** [Jack Klugman](#), [Garry Walberg](#) and [John S. Ragin](#)

**March 27, 1980**

The Unit "Hill 60" March 15, 2009

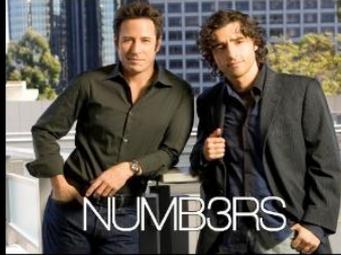


**The Unit:** Season 4, Episode 16  
**Hill 60** (15 Mar. 2009)  
 TV Episode - **TV 14** 60 min - [Action](#) | [Drama](#) | [Thriller](#)

**Your rating:** ★★★★★★ ~/10  
 Ratings: 8.3/10 from 51 users  
 Reviews: [write review](#)

Chlorine gas is used in an attack on the town, leaving Tiffany to save herself and her students, Mack and Bob to secure the apartments and Charles stranded on the road... [See full summary](#) »

**Director:** [James Whitmore Jr.](#)  
**Writers:** [Eric L. Haney](#) (book), [David Mamet](#) (creator), and [2 more credits](#) »  
**Stars:** [Dennis Haysbert](#), [Regina Taylor](#) and [Robert Patrick](#)



**Numb3rs** Season 3, Ep. 22 "Under Pressure" **TV 14**  
 (No customer reviews yet. Be the first)

Don and the FBI uncover a possible terrorist attack on Los Angeles that targets the city's water supply.

**Starring:** Rob Morrow, David Krumholtz  
**Directed by:** J. Miller Tobin  
**Runtime:** 41 minutes  
**Original air date:** May 04, 2007

**May 4, 2007**

Where does "Security" at your Water Facilities Begin?

- At the Source?
- At the Gate?
- At the Customers' Service?

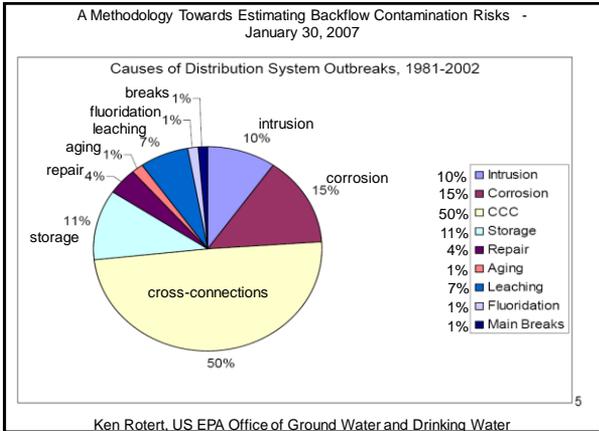
Where does "Security" at your Water Facilities End?

- At the Gate?
- At "point of service"?
- The "last free-flowing" tap?

# DISTRIBUTION SYSTEMS: OFTEN NEGLECTED

“...distribution systems have been responsible for 45% of the outbreaks of waterborne disease.”  
*AWWA Journal*, Sept 2001 &  
*Opflow* Vol. 29, No. 6 June 2003

**Bioterrorism Preparedness and Response Act – June 12, 2002**  
 Drinking water treatment systems must conduct vulnerability assessments and submit emergency response plans to the federal government on a specific schedule.



- ## Access to Water Distribution System
- Air Relief Valves
  - Pressure Regulating Valves
  - Fire Hydrants
  - Water Meters
  - Backflow Prevention Assemblies

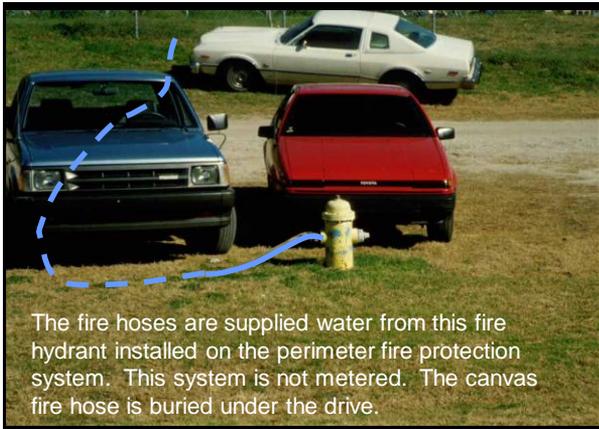




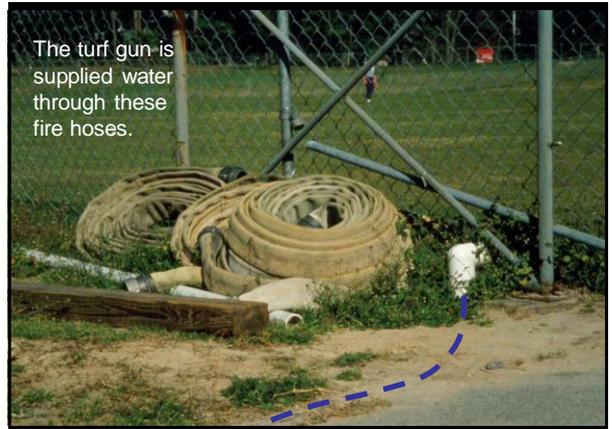
At a water plant, a fire hose extends from the fire hydrant to a storm drain.



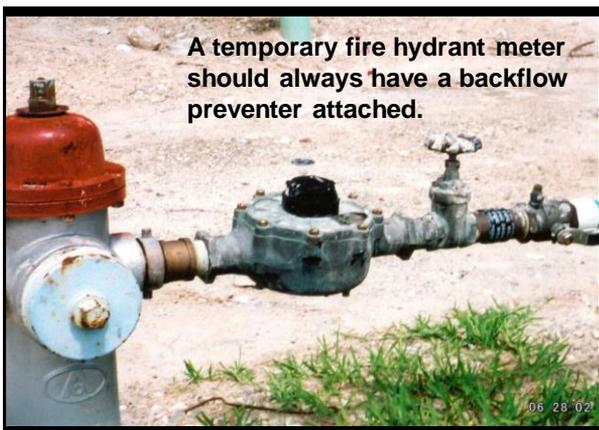
This is a irrigation or turf gun.



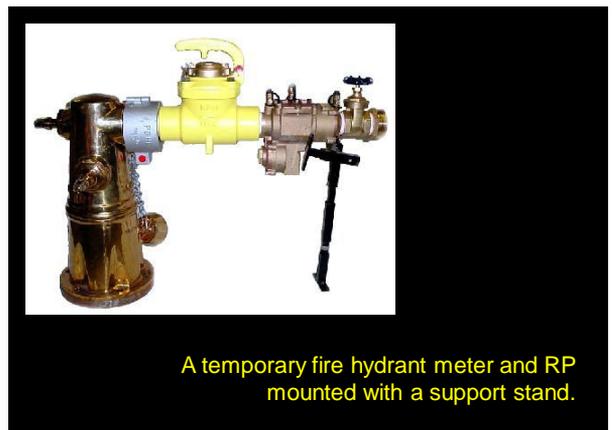
The fire hoses are supplied water from this fire hydrant installed on the perimeter fire protection system. This system is not metered. The canvas fire hose is buried under the drive.



The turf gun is supplied water through these fire hoses.



A temporary fire hydrant meter should always have a backflow preventer attached.



A temporary fire hydrant meter and RP mounted with a support stand.

The first discharge from a fire hydrant is sometimes discolored.

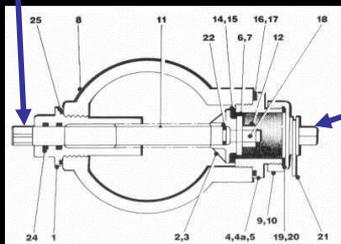


Sometimes it takes a hammer to open the nozzles. A good preventive maintenance program should be in place.



Two Fire Hydrants connected together?

OPERATING NUT

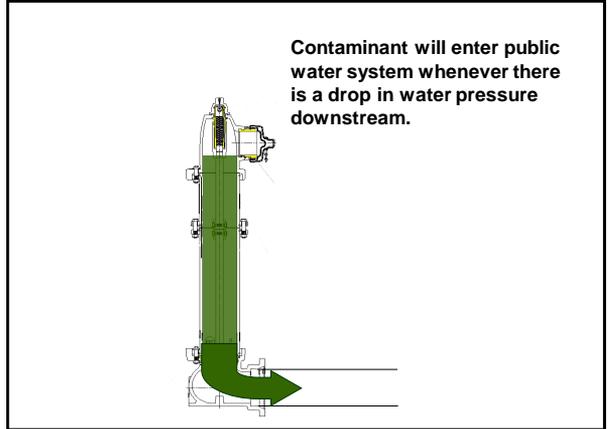


CAP

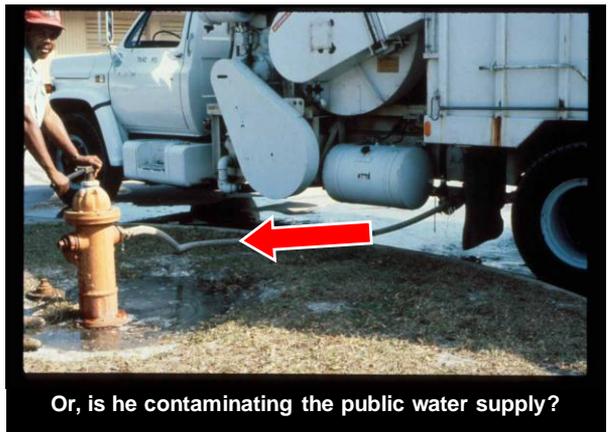
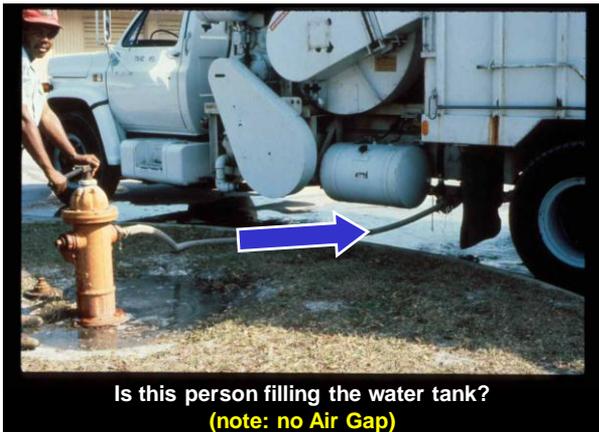
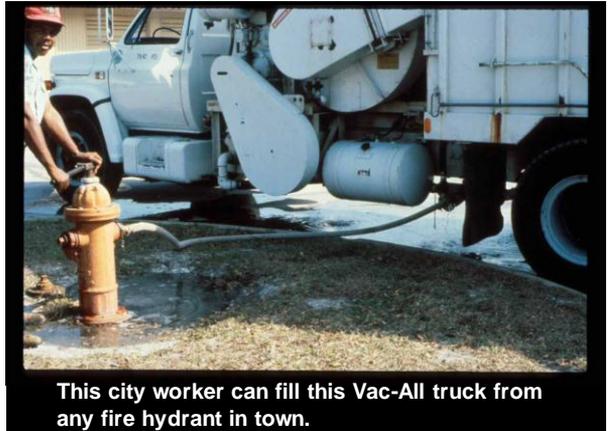
WET CHARGED FIRE HYDRANT



Wet Charged Fire Hydrants

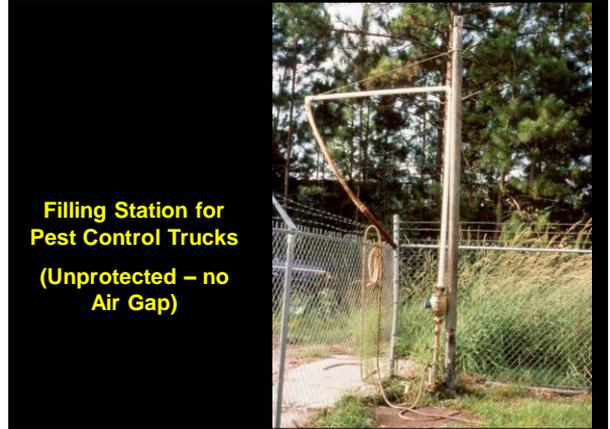


**Your Distribution System**  
is contaminated every day by accident.  
How easy will it be for terrorists to contaminate your system?

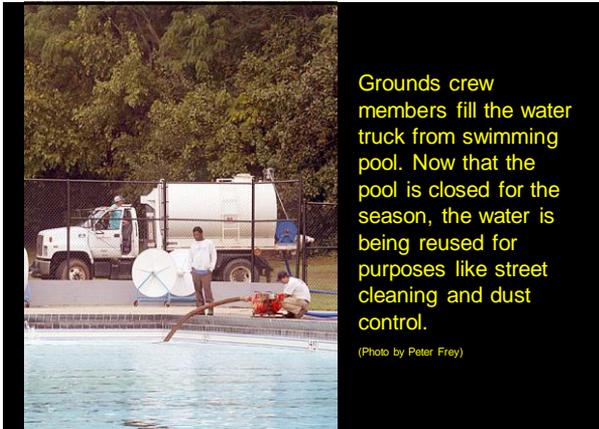




Filling Station for Reclaim Water



Filling Station for Pest Control Trucks (Unprotected – no Air Gap)

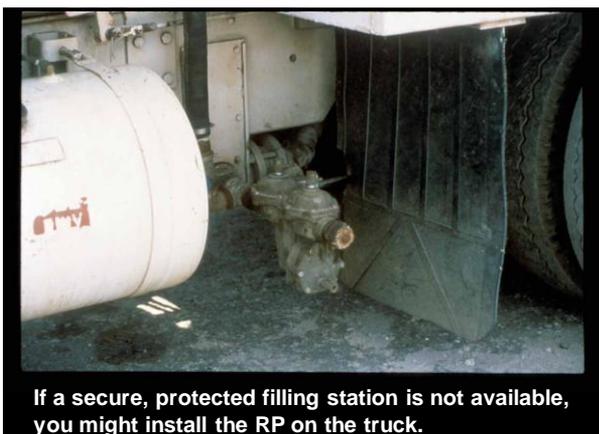


Grounds crew members fill the water truck from swimming pool. Now that the pool is closed for the season, the water is being reused for purposes like street cleaning and dust control.

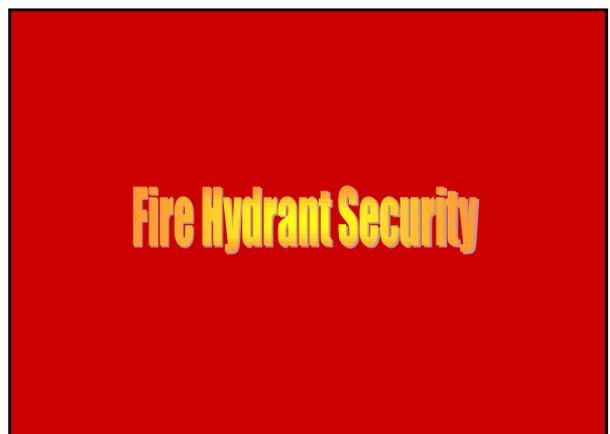
(Photo by Peter Frey)



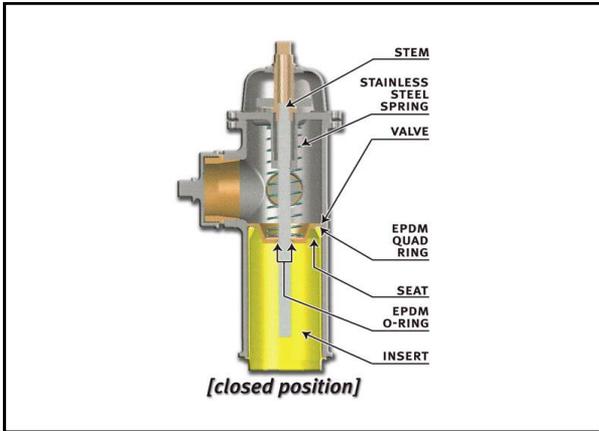
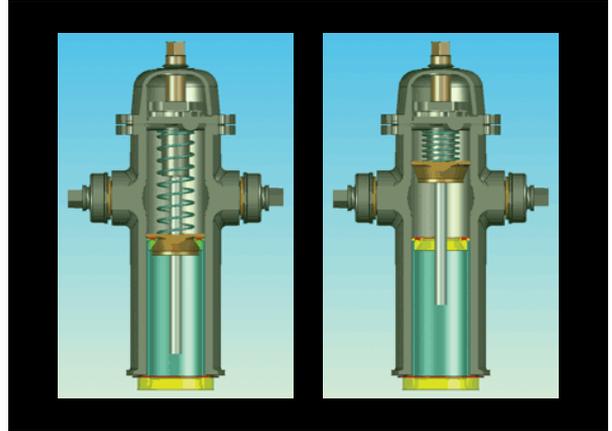
protected water filling station

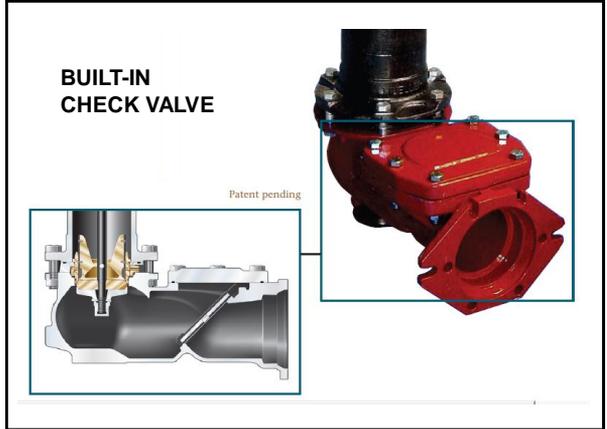


If a secure, protected filling station is not available, you might install the RP on the truck.

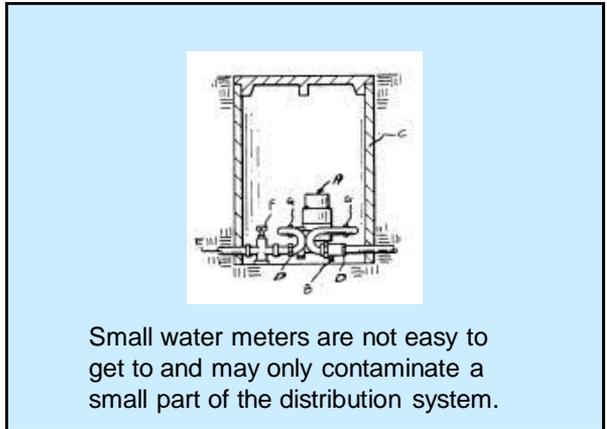




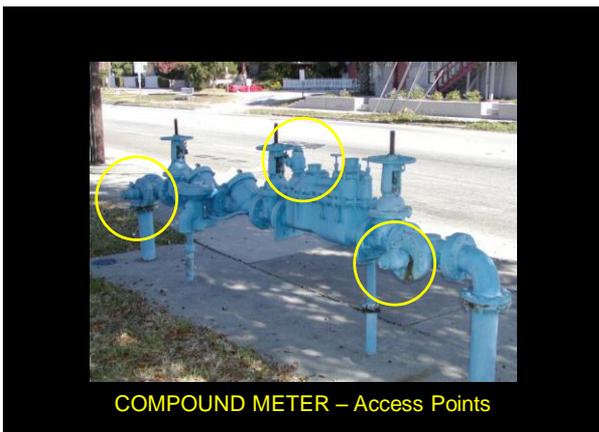




# *Water Meters*



Small water meters are not easy to get to and may only contaminate a small part of the distribution system.



COMPOUND METER – Access Points





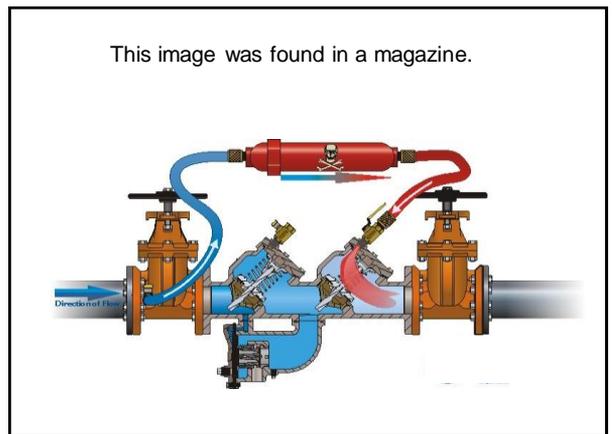
Two of the many backflow preventers serving a football stadium.



Well Hidden?

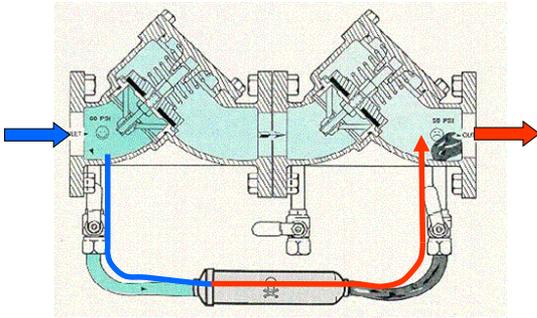


Natural Vegetation



This image was found in a magazine.

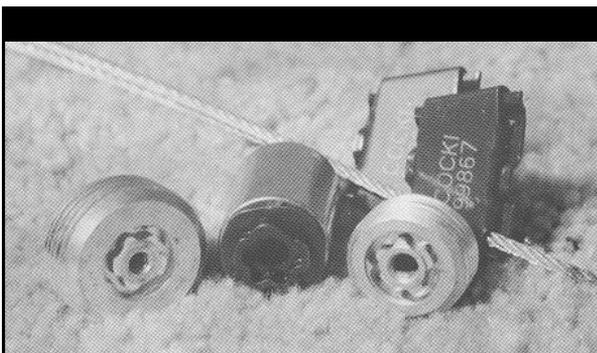
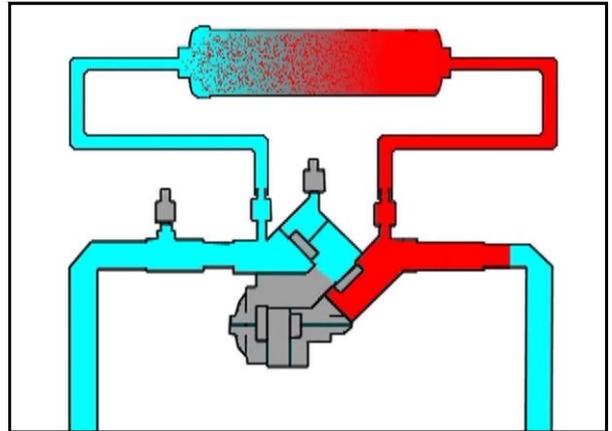
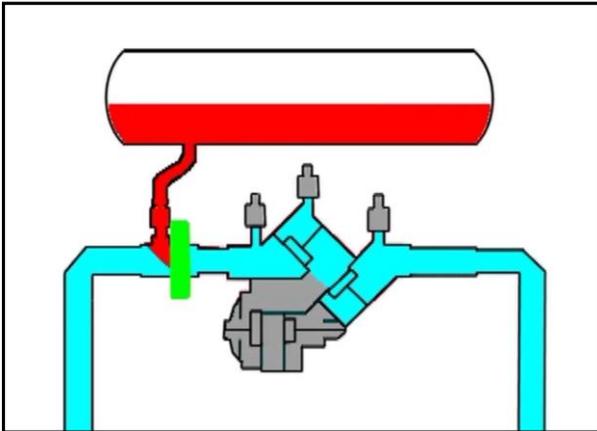
This image was removed from the Web.



**PATH OF LEAST RESISTANCE**

### *Hillsborough County- retirees*

- *Lake water okay to drink*
- *No backflow protection needed*
- *But okay if County pays all costs.*



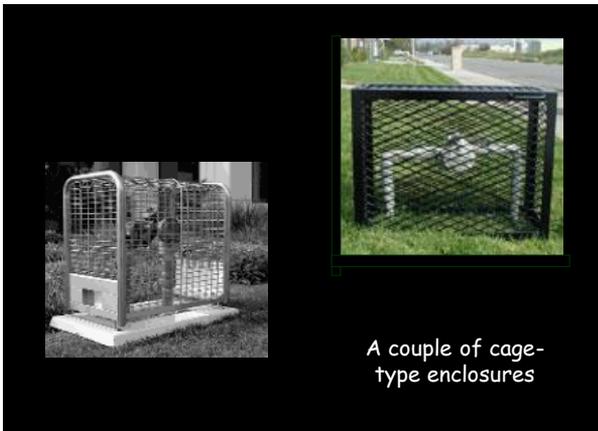
**Testcock locks**



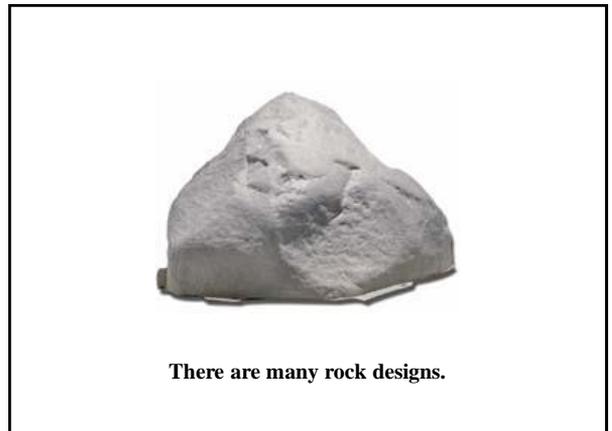
**Testcock locks**



A protective enclosure



A couple of cage-type enclosures



There are many rock designs.



Protective enclosure for a backflow preventer on a fire protection system.



## Who's in Charge of Security of the Water Distribution System?

- **Security Chief?**
- **Facility Manager?**
- **CCC Supervisor?**
- **Police Department?**

## Develop Effective Plans

Are your plans current, accurate, and compliant with the latest regulations?

Will your response plans stand up to the rigors of an oil spill, other emergency, or crisis?

How would your plans fare under the scrutiny of the media, government agencies, auditors or shareholders?

How would your plans stand up to a lawsuit?

## Keep Your Emergency Response Plan Up-to-Date

- Make a conscious commitment
  - If you don't - Pre- 9/11 programming will run your security
- Be willing to share information
  - Even good and interesting things

## *Vulnerabilities...*

You can't protect against every possibility...

But you can make informed decisions using the best available resources

## THREATS?

- What's Real?
- What's Hype?
- Limited Resources

## INTELLIGENCE



Do you know the latest terrorist capabilities and methodologies as they pertain to water facilities?



### Do You Monitor Your Distribution System ?

- Disinfectant Levels Throughout System
  - Weekly Sampling (required)
  - Daily Sampling
  - Instant Monitoring with Telemetry
- Age of Water in System at any Node
- Direction of Flow in System
- Constant Monitoring of System Pressure

### Emergency Procedures

- For Backflow Incidents
  - Do you have written procedures?
  - Who is in charge?
  - Who do you contact?
  - and how do we contact those people?
  - Who will investigate the incident?
  - How do we notify the customers?
  - What do we do next?

You must decide where you will allocate your resources toward distribution system security.

Are your fire hydrants secure?

Do you have several dedicated, protected and monitored filling stations for water tank trucks?

Are the backflow prevention assemblies serving large facilities secure from terrorism?



### COST - BENEFIT RATIO

NEW ORLEANS – Levies built to withstand category 3 hurricanes.

Cost to build category 5 levies compared to costs for clean-up after Katrina?

WHAT IS A PERSON WORTH?

### BACKFLOW PREVENTION INFORMATION

[www.abpa.org](http://www.abpa.org)

[www.nobackflow.com](http://www.nobackflow.com)