

10. - BACKFLOW AT A FIRE PROTECTION SYSTEM

DATE OF BACKFLOW INCIDENT: June 1979

LOCATION OF BACKFLOW INCIDENT: Meridian, Idaho

SOURCE(S) OF INFORMATION:

- American Water Works Association, Recommended Practice for Backflow Prevention and Cross-Connection Control, AWWA Manual M14, Second Edition, 1990
- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995

CASE HISTORY

On June 18, 1979, residents in the City of Meridian, Idaho, complained that their water had an odor and taste of onions. At this time, the City was routinely flushing fire hydrants in the area of the complaints. The City could not see a consistent pattern to the odor or the complaints.

By isolating portions of the water system and conducting a premises- by-premises inspection, the City narrowed the source of the odor to one area containing a supermarket, a car wash, and a church printing firm. When the City flushed the nearest fire hydrant, the odor became very strong. Inspection revealed that an alarm check valve on a fire sprinkler system in the supermarket was leaking and allowing stagnant water to backflow from the sprinkler system into the public water system.

When the pressure in the public water system was reduced during fire hydrant flushing, the alarm check valve on the fire sprinkler system at the supermarket would leak, but the check valve would not open enough to set off the alarm. The City turned off water service to the supermarket fire sprinkler system, and the odor and taste problem did not occur during hydrant flushing.

Analysis of water samples taken from the supermarket fire sprinkler system showed *Clonothrix fusa* and *Zoogleora ramigera* bacteria in sufficient concentration to cause the onion odor and taste problem.