

# WATER BULLETIN

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## Drinking water supplies and biological warfare

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Recent world events have called into question the security of our nation's drinking water supplies. Although threats to water supplies are not new and most water system operators have emergency preparedness plans, terrorism poses a relatively unfamiliar and confusing threat. This article provides a brief overview of the situation and resources for more information.

According to a U.S. Army Research paper, "Natural and Terrorist Threats to Drinking Water Supplies," only six of 84 terrorist events between 1942 and 1989 involved water. Historically drinking water systems have rarely been a terrorist target, possibly because most biological warfare agents are intended for aerosol application and are much less effective if diluted in water. The potential for rumors and unfounded fears many indeed be as incapacitating as a real attack. However, water systems have received threats, and because the possibility exists that the threats could be carried out, several organizations and governmental agencies advise water systems to take threats seriously.

Approximately 54,064 community drinking water systems provide water in the United States. About 85 percent of the systems are small or very small, meaning that they serve fewer than 3,300 customers. Most larger metropolitan systems have improved their security recently, but many individuals involved in water resources think more must be done. The smaller systems in particular need to address security matters which may prove challenging because, until recently, water authorities strove to keep their facilities as open and publicly accessible as possible.

Recommendations to the smaller systems include the following: conduct a vulnerability assessment, evaluate physical components, assess operating rules and procedures, develop a back-up water source, evaluate control centers and labs, analyze maintenance and storage facilities, and manage a security plan.

With all these recommendations for small water systems, what can the individual, private drinking water well user do? Little information exists for this audience. A possible reason may be that water resources and terrorism experts believe that larger supplies, such as reservoirs, would be more probable targets. The water treatment industry is currently struggling with treatment issues relating to biological warfare. Examples of possible agents that are being considered are the following: anthrax, botulinum toxins, cholera, *Cryptosporidium*, viruses, plague, salmonella, shigellosis and tularemia. Presently, no point-of-use products have been certified by a third party for their effectiveness against possible biological warfare agents. However, studies are currently underway and there are preferred technologies for different agents.

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For more information about this topic, see the following sources:

The National Drinking Water Clearinghouse – A public service organization that has assembled a body of information about protecting small water systems from potential threats ([www.ndwc.wvu.edu](http://www.ndwc.wvu.edu)).

National Emergency Response and Rescue Training Center – A Department of Justice funded group that offers courses to public works personnel (see above link).

Water Tech Online - This online magazine, [www.watertechonline.com](http://www.watertechonline.com) reports all ongoing developments in the water world and has a good database with information.

Water Quality Association and American Water Works Association – These two groups provide information via their following websites: [www.wqa.org](http://www.wqa.org) and [www.awwa.org](http://www.awwa.org).

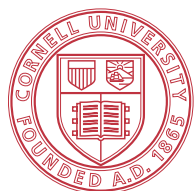
Center for Disease Control – The CDC has a bioterrorism preparedness and response website at [www.bt.cdc.gov](http://www.bt.cdc.gov).

Federal Emergency Management Agency Emergency Management Guide for Business and Industry – FEMA has a step-by-step approach to emergency planning, response and recovery for companies of all sizes. See their website [www.fema.gov](http://www.fema.gov).

### **Selected References**

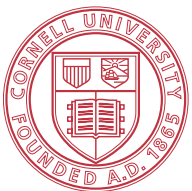
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