

Testimony of Paul Orum
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Before the

Committee on Environment and Public Works
United States Senate

July 28, 2010

Good afternoon, I am Paul Orum, consultant to public interest organizations on chemical safety and security. Thank you for the opportunity to testify on behalf of the blue-green chemical security coalition and to present findings from survey reports that show how leading water utilities are reducing their vulnerability to accidents and terrorism.

I also served on the advisory Water Security Working Group to EPA's National Drinking Water Advisory Panel, and on a Government Accountability Office experts' panel on how federal funds should be spent to improve security at wastewater facilities.ⁱ I formerly directed the Working Group on Community Right-to-Know, an affiliation of public interest organizations concerned with government information policy.

I wish to stress the following:

1. Many parties have warned about security of industrial chemicals.

Many agencies and organizations have warned that an intentional release of industrial chemicals could harm thousands of Americans.

- The Homeland Security Council uses 17,500 deaths in a planning scenario for a terrorist attack on a large chlorine tank in an urban area.ⁱⁱ
- An insurance industry estimate points to more than \$7 billion in damages from a major urban release of chlorine gas.ⁱⁱⁱ
- Environmental Protection Agency figures show some 800 water and wastewater facilities with 10,000 or more people living within the vulnerability zone of a toxic gas release.^{iv}

- More than 20 federal agencies, industry associations, labor unions, think tanks, public interest groups, and independent observers warned about the problem. These include: the Department of Homeland Security; Department of Justice; Environmental Protection Agency; Government Accountability Office; Agency for Toxic Substances and Disease Registry; Congressional Budget Office; National Academy of Sciences; Army Surgeon General; Lawrence Livermore National Laboratory; Brookings Institute; Rand Corporation; Center for Strategic and International Studies; Partnership for a Secure America; American Chemistry Council; Association of American Railroads; United Steelworkers; Teamsters Union; Risk Management Solutions (insurance industry); Environmental Defense; U.S. Public Interest Research Group; Greenpeace; Working Group on Community Right-to-Know, and Center for American Progress, doubtless among others.^v

The oil spill in the Gulf of Mexico reminds us that worst-case releases do happen. Congress should heed warnings about chemical security, and act to protect people, property, and the environment.

2. Safer, more secure chemicals and processes are widely used and can remove dangers to employees and communities.

In four survey reports, the Center for American Progress identified more than 630 chemical facilities across 20 industries that are already using a chemical or process that avoids the possibility of a catastrophic chemical release.^{vi} The water sector in particular has many converted facilities.

Findings include:

- At least 554 drinking water and wastewater facilities in 47 states have replaced extremely hazardous substances with safer and more secure chemicals or processes (please see attached map). These changes removed 40 million Americans from the danger of a toxic gas plume from these facilities.
 - These conversions took place over ten years. At this rate, it would take about a half-century to convert the 2,500 remaining water and wastewater facilities that still report large amounts of chlorine gas.^{vii}

- There is also no priority for converting the highest hazard facilities (arguably the 35 that still use chlorine gas by the railcar), which could leave in place the greatest chemical hazards for a half-century.

Of the 554 facilities, 235 drinking water facilities typically switched from gaseous chlorine to liquid bleach. Of the 315 converted wastewater facilities, approximately 140 switched to ultraviolet light and 175 switched to liquid bleach. Some wastewater plants also replaced anhydrous sulfur dioxide, used for dechlorination, with sodium bisulfite. (Four of the facilities treat both drinking water and wastewater.)

Some bleach plants that supply water utilities also use production methods that never store or transport chlorine gas.^{viii} Other companies provide technologies that eliminate storage and shipment of chlorine gas by generating liquid bleach on-site.^{ix}

3. Facilities that use safer, more secure chemicals and processes avoid costs, dangers, and regulatory requirements.

When facilities remove chemical hazards they avoid costs such as potential liability and chemical security regulations.

- Survey respondents reported *costs avoided* with safer alternatives that include regulatory compliance, personal protective equipment, chemical security, hazmat training, emergency planning, hazard communication, and potential liability, among more than 20 types of avoided costs.^x
- One-third of converted facilities anticipated saving money as a result.^{xi} Conventional security *always* costs money, while upgrading technology *sometimes* saves money. Physical site security, however important, cannot assure protection, address supply chain risk, or modernize facilities.
- The Department of Homeland Security estimates regulatory compliance costs under the current interim Chemical Facility Anti-Terrorism Standards (CFATS) to be \$12.5 billion for 5,000 facilities over ten years.^{xii} At that rate, if 2,500 water and wastewater facilities bear similar costs, and half (1,250) drop out of the program by converting to safer and more secure options, then the avoided costs of compliance for those

1,250 converted water facilities will be roughly \$3.125 billion over ten years.

It only makes sense for facilities to consider such options, before assuming security costs that can be avoided and before imposing costs and dangers on government agencies, employees, emergency responders, and the public.

Even where facilities don't save money, alternatives that remove extremely hazardous substances are often cost effective.

- Of 195 converted facilities that provided general cost information, 49 percent reported the changes cost less than \$100,000, and 87 percent reported conversion costs below \$1,000,000.^{xiii}
- Of 20 big city water and wastewater facilities that converted, the highest cost per customer served was \$1.50 per year in construction and operating costs—the price of a small bag of potato chips—and most spent well less than that amount.^{xiv} The U.S. Government Accountability Office found a similar range of costs for converting large wastewater utilities.^{xv}

4. The Senate should act without further delay.

Current interim CFATS standards exempt water and wastewater facilities and do not utilize *smart security*—the cost effective alternatives that can remove unnecessary chemical hazards.

I am submitting with my testimony a letter signed by more than 100 labor and public health organizations in support of chemical security legislation H.R.2868, S.3598, and S.3599. These groups support disaster prevention policies including safer and more secure technologies, employee participation, and government accountability.

This proposed legislation builds on current laws, and protects current drinking water and wastewater programs and standards, including state primacy and collaboration with local utilities. It provides each facility the flexibility to conduct its own assessment suitable to its activities and circumstances. Knowledge of solutions is dispersed. The proposed legislation makes use of those solutions.

The bill also utilizes computer software and tools to assist smaller (tier 3 and tier 4) facilities with compliance, an innovation that should reduce compliance costs for covered facilities.

There are also elements we urge the Committee to improve. Among these are: improving government accountability and public confidence by making public non-sensitive information on the compliance and implementation of security standards; ensuring integrity of assessments by removing the exclusion from the requirement to correct deficient assessments; and, removing criminal penalties for disclosure of protected information in the absence of such penalties for non-compliance and endangerment.

Congress can significantly improve the safety and security of people who work in and live near water utilities that use extremely hazardous substances. This is a mature issue—Senator Lautenberg first offered legislation in 1999—and current proposed bills are the result of a long process involving significant compromise. We urge the Committee and Senate to act before the temporary interim program expires October 4.

Attachments:

Map of 554 converted water and wastewater facilities.

Blue-green chemical security coalition letter, July 2010.

ⁱ Wastewater Facilities: Experts' Views on How Federal Funds Should Be Spent to Improve Security, Government Accountability Office, GAO-05-165, January 2005.

ⁱⁱ National Planning Scenario 8: Chemical Attack—Chlorine Tank Explosion, Homeland Security Council in partnership with the Department of Homeland Security, 2005.

ⁱⁱⁱ Catastrophe, Injury, and Insurance: The Impact of Catastrophes on Workers Compensation, Life, and Health Insurance, Risk Management Solutions, Inc., 2004.

^{iv} Risk Management Planning program figures provided by the U.S. Environmental Protection Agency to the Senate Environment and Public Works Committee, July 1, 2010.

^v Reports and statements warning about chemical terrorism include:

- Chemical Terrorism: US Policies to Reduce the Chemical Terror Threat, Partnership for a Secure America, September 2008.
- Statement before the U.S. House of Representatives Committee on Transportation and Infrastructure, Subcommittee on Railroads, Association of American Railroads, June 13, 2006.
- Homeland Security Committee Urged to Consider Safer Chemicals; Chemical Companies Should Stop Manufacturing Extremely Dangerous Chemicals, Association of American Railroads, 2008.

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- Catastrophe, Injury, and Insurance: The Impact of Catastrophes on Workers Compensation, Life, and Health Insurance, Risk Management Solutions, Inc., 2004.
 - Assessing Terrorist Motivations for Attacking Critical “Chemical” Infrastructure, Laurence Livermore National Laboratory, December 20, 2004.
 - Testimony of Dr. Jay Boris before the City Council of the District of Columbia, U.S. Naval Research Laboratory, October 6, 2003.
 - A Method to Assess the Vulnerability of U.S. Chemical Facilities, National Institute of Justice, U.S. Department of Justice, November 2002.
 - Strategic Plan for Homeland Security, U.S. Environmental Protection Agency, September 2002.
 - Homeland Security: Voluntary Initiatives Are Under Way at Chemical Facilities, but the Extent of Security Preparedness is Unknown, U.S. General Accounting Office, GAO-03-439, March 14, 2003.
 - Homeland Security and the Private Sector, Congressional Budget Office, December 2004.
 - Statement by the Department of Homeland Security on Continued Al-Qaeda Threats, Department of Homeland Security, November 21, 2003.
 - Industrial Chemicals and Terrorism: Human Health Threat Analysis, Mitigation and Prevention, Agency for Toxic Substances and Disease Registry, 1999; and, Terrorist Use of Expedient Chemical Agents: Health Risk Assessment and Las Vegas Case Study, Agency for Toxic Substances and Disease Registry, undated.
 - Study Assesses Risk of Attack on Chemical Plant, Army Surgeon General reported in *Washington Post*, March 12, 2002.
 - The Terrorist Threat in America, Chemical Manufacturers Association (American Chemistry Council), April 1998.
 - PACE International Union Survey: Workplace Incident Prevention and Response Since 9/11, Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE), October 27, 2004.
 - America the Vulnerable: How Our Government Is Failing to Protect Us From Terrorism, Stephen Flynn, 2004.
 - Protecting the American Homeland, Brookings Institution, March 2002.
 - Toxic Warfare, RAND Corporation, 2002.
 - News Release: Chemical Facilities Vulnerable, Center for Strategic and International Studies, December 23, 2003.
 - Eliminating Hometown Hazards: Cutting Chemical Risks at Wastewater Treatment Facilities, Environmental Defense, December 2003.
 - The Safe Hometowns Guide, The Safe Hometowns Initiative, 2002.
 - Needless Risk: Oil Refineries and Hazard Reduction, U.S. PIRG Education Fund, August 2005.
 - Unnecessary Dangers: Emergency Chemical Release Hazards at Power Plants, Working Group on Community Right-to-Know, July 21, 2004.
 - Chemical Plants Remain Vulnerable to Terrorists: A Call to Action, United Steelworkers of America, undated.
 - High Alert: Workers Warn of Security Gaps on Nation’s Railroads, International Brotherhood of Teamsters, 2005.

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- Making the Nation Safer: The Role of Science and Technology in Countering Terrorism, National Research Council, National Academy of Sciences, 2002.
 - Terrorism and the Chemical Infrastructure: Protecting people and Reducing Vulnerabilities, National Research Council, National Academy of Sciences, 2006.

^{vi} These survey reports by the Center for American Progress are:

- Preventing Toxic Terrorism: How Some Chemical Facilities are Removing Danger to American Communities (2006)
- Toxic Trains and the Terrorist Threat: How Water Utilities Can Get Chlorine Gas off the Rails and Out of American Communities (2007)
- Chemical Security 101: What You Don't Have Can't leak, or Be Blown Up by Terrorists (2008)
- Safer Chemicals Create a More Secure America: We Can Diminish the Security Threat from Chemical Plants (2010).

^{vii} Approximate number of drinking water and wastewater facilities that report an extremely hazardous substance under the Environmental Protection Agency's Risk Management Planning program.

^{viii} Companies operating or constructing bleach plants that do not store chlorine gas include BleachTech, Odyssey Manufacturing, K2Pure Solutions, Kuehne Chemical, and Clorox.

^{ix} Companies that provide technologies for generating chlorine bleach on-site include MIOX Corporation, U.S. Filter, Severn Trent Services, and Electrolytic Technologies.

^x Preventing Toxic Terrorism, Center for American Progress, 2006, Page 9.

^{xi} Preventing Toxic Terrorism, Center for American Progress, 2006, Page 8.

^{xii} Regulatory Assessment, Chemical Facility Anti-Terrorism Standards Interim Final Rule, Department of Homeland Security, DHS-2006-0073, April 1 2007, Table 4.

^{xiii} Preventing Toxic Terrorism, Center for American Progress, 2006, Page 8.

^{xiv} Toxic Trains and the Terrorist Threat, Center for American Progress, April 2007, Pages 12-13.

^{xv} Securing Wastewater Facilities: Utilities Have Made Important Upgrades but Further Improvements to Key System Components May Be Limited by Costs and Other Constraints, Government, GAO-06-390, March 2006.

AFL-CIO – American Federation of Teachers – Communications Workers of America (CWA)
International Brotherhood of Teamsters – International Chemical Workers Union Council/UFCW
United Automobile Aerospace and Agricultural Implement Workers of America (UAW)
United Food and Commercial Workers – United Steel Workers (USW)
Service Employees International Union (SEIU)
Advocates for Environmental Human Rights – Beyond Pesticides – BlueGreen Alliance
Breast Cancer Fund – Center for Environmental Health – Center for Health, Environment, and Justice
Center for International Environmental Law – Clean Air Council – Clean Water Action
Clean Production Action – Ecology Center – Environment America – Environmental Defense Fund
Environmental Working Group – Friends of the Earth – Greenpeace – Institute for Agriculture and
Trade Policy – League of Conservation Voters – OMB Watch – Physicians for Social Responsibility –
Sierra Club – U.S. Public Interest Research Group
Alaska Community Action on Toxics – Arizona PIRG – Citizens for a Clean Environment, Inc.
Clean New York – Clean Water Action-Massachusetts – Connecticut Coalition for Environmental Justice
Connecticut Council on Occupational Safety and Health – Deep South Center for Environmental Justice
Don't Waste Arizona – Ecological Conservation Organization (AR) – Empire State Consumer Project
Environmental Health Fund – Environmental Health Strategy Center
Environmental Justice Action Group of WNY – Environment Illinois – Environment Massachusetts
Environment Texas – Farmworker Association of Florida – Galveston Houston Association for Smog
Prevention and Mothers for Clean Air (GHASP/MfCA) – Global Community Monitor
Glynn Environmental Coalition – Great Neck Breast Cancer Coalition – Green Action
Green Decade-Newton Chapter – Green Education and Legal Fund, Inc.
Greenwich Citizens Committee – Healthy Building Network – Healthy Schools Network
Huntington Breast Cancer Action Coalition, Inc. – Illinois PIRG – Indiana Toxics Action
International Campaign for Justice in Bhopal – Kentucky Environmental Foundation
Kristen Breitweiser, 9/11 Widow – Louisiana Bucket Brigade – Maine Labor Group on Health
Maine Women's Lobby – Maryland PIRG – Massachusetts Breast Cancer Coalition
Massachusetts Green Jobs Coalition – Massachusetts Interfaith Power and Light – Massachusetts PIRG
Michigan Environmental Council – MomsRising – Natural Resources Council of Maine
New Jersey Environmental Federation – New Jersey PIRG – NJ Work Environment Council
New York PIRG – Oregon PIRG – Oregon Toxics Alliance – People's Settlement Association
Prevention Is The Cure, Inc. – Protect All Children's Environment – Public Citizen-Texas
Science and Environmental Health Network – Sciencecorps – Second Look – Somerville Climate Action
Students for a Just and Stable Future – Texas Campaign for the Environment – Texans for Public Justice
Texas PIRG – Urban Health Environment and Learning Project – Vermont PIRG
Veterans for Peace/Smedley Butler Brigade – Washington Toxics Coalition
Women's Voices for the Earth – Worksafe Inc.

July 2010

Dear Senator,

On November 6, 2009, the House of Representatives passed the *Chemical and Water Security Act of 2009* (H.R.2868) a comprehensive chemical security bill. On July 15, Senator Frank Lautenberg introduced the Secure Chemical Facilities Act (S.3599) and the Secure Water Facilities Act (S.3598). **The undersigned organizations support this legislation and urge the U.S. Senate to pass it before the interim law expires on October 4, 2010.**

Chemical plants and other chemical facilities remain one of the most vulnerable sectors of America's infrastructure to terrorist attacks. The Department of Homeland Security (DHS) has identified approximately 5,000 "high-risk" U.S. chemical facilities. In 2004, the Homeland Security Council planning scenario projected that an attack on a chemical facility

would kill 17,500 people and send an additional 100,000 people to the hospital. A December 2009 Congressional Research Service review of U.S. Environmental Protection Agency (EPA) data shows that 91 chemical facilities each put 1 million or more people at risk.

The current interim statute enacted as a rider to the 2007 Homeland Security appropriations bill temporarily authorized the Chemical Facility Anti-Terrorism Standards (CFATS) to give Congress time to enact comprehensive legislation. As a security program CFATS was intended only as an interim stop gap measure. It fails to protect the millions of Americans at risk by eliminating preventable catastrophic hazards.

The interim statute:

- Prohibits the DHS from requiring any specific “security measure” whatsoever.
- Fails to develop the commonsense use of *smart security* or safer and more secure chemical processes that can cost-effectively prevent terrorists from triggering chemical disasters.
- Explicitly exempts thousands of chemical and port facilities, including approximately 2,400 water treatment facilities and 400-600 port facilities including many oil refineries.
- Fails to involve knowledgeable employees in the development of vulnerability assessments and security plans, or protect employees from excessive background checks.
- Denies the public the information needed to ensure an effective, accountable program.

On February 4th Senator Collins (R-ME) introduced a bill (S. 2996) that would do nothing but extend this inadequate and flawed law for five more years. **We strongly oppose S. 2996 and any further delay in comprehensive chemical security legislation.**

In their March 3rd testimony before the Senate Homeland Security and Governmental Affairs Committee, both the DHS and the EPA called comprehensive legislation that requires high risk facilities to “assess” safer chemical processes and conditionally requires the highest risk plants to use safer chemical processes where feasible. In addition, they urged Congress to eliminate the gap in security for water treatment facilities and to modify the exemption for port facilities now regulated under the Maritime Transportation Security Act to ensure consistency with CFATS.

To correct the flaws in the interim law and enact comprehensive legislation, **we urge you to support Senator Lautenberg’s comprehensive chemical security legislation in the Senate** as a companion to H.R. 2868. H.R. 2868 is a compromise that *builds seamlessly on CFATS*. It maintains the DHS as the lead agency regulating privately owned chemical plants, including port facilities, and authorizes the EPA as the lead agency regulating publicly owned water and wastewater treatment facilities and provides funding for publicly owned water facilities to adopt the most protective security measures.

In addition, the Secure Chemical Facilities Act (S.3599) and the Secure Water Facilities Act (S.3598) will:

- Require high risk facilities to assess safer chemical processes and conditionally requires the highest risk plants (approximately 107) to use safer chemical processes where feasible and commercially available and includes a technical appeals process to challenge DHS decisions;
- Provide up to \$100 million in the first year to assist privately owned plants to use safer and more secure processes, \$125 million for drinking water facilities and an unspecified portion of \$200 million for wastewater facilities to use safer more secure processes;
- Involve plant employees in the development of security plans and provide protections for whistleblowers and limits back ground check abuses;
- Preserve state authority to establish stronger security standards;

Passing comprehensive legislation this year is vital to our national security. Since 1999, more than 500 facilities have used *smart security* to eliminate these risks to more than 40 million Americans. In a March 2006 floor statement, then Senator Obama said, "by employing safer technologies, we can reduce the attractiveness of chemical plants as a target...Each one of these methods reduces the danger that chemical plants pose to our communities and makes them less appealing targets for terrorists." In November 2009, the Clorox Company announced plans to convert all seven of its U.S. facilities to eliminate the bulk use of chlorine gas and inherent risks to nearby communities.

The Association of American Railroads issued a statement in 2008 saying, *"It's time for the big chemical companies to do their part to help protect America. They should stop manufacturing dangerous chemicals when safer substitutes are available. And if they won't do it, Congress should do it for them..."*

Disaster prevention is a defining policy in this legislation which has taken on new urgency following the BP oil blow out in the Gulf of Mexico and renewed threats of terrorism. To truly protect employees and surrounding communities, a comprehensive law should:

- Use *smart security* to prevent the catastrophic consequences of an attack by implementing cost-effective safer and more secure chemicals and processes at all of the highest risk facilities.
- Include all categories of facilities such as port facilities and water treatment plants.
- Involve plant employees in developing plant security programs, including participation in workplace inspections, and provide employees with both an appeals and a waiver procedure to protect against excessive background checks.
- Allow citizen suits against chemical facilities and government agencies to enforce the law.
- Ensure greater accountability through the disclosure of non-sensitive information on compliance and implementation of security standards.
- Allow states to set more protective security standards.

We look forward to working with you and your staff on this urgently needed legislation.

Sincerely,

Nathalie Walker & Monique Harden
**Advocates for Environmental
Human Rights**

Tom Trotter
AFL-CIO

Pamela K. Miller
**Alaska Community Action on
Toxics**

Tor Cowan
American Federation of Teachers

Diane Brown
Arizona PIRG

Jay Feldman
Beyond Pesticides

Yvette Pena Lopes
Blue Green Alliance

Gretchen Lee
Breast Cancer Fund

Judy Levin
Center for Environmental Health

Lois Gibbs
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**Center for Health, Environment,
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Cindy Luppi
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Mark A. Mitchell
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Dr. Beverly H. Wright
**Deep South Center for
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Stephen Brittle
Don't Waste Arizona

Rob Fisher
**Ecological Conservation
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Tracey Easthope
Ecology Center

Judy Braiman
Empire State Consumer Project

Anna Aurilio
Environment America

Richard Denison
Environmental Defense Fund

Judy Robinson
Environmental Health Fund

Michael Belliveau
**Environmental Health Strategy
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Judith M. Anderson
**Environmental Justice Action
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Environment Texas

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**Green Education and Legal Fund,
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Rick Hind
Greenpeace

Tracy Frisch
**Greenwich Citizens Committee
(NY)**

Bill Walsh
Healthy Building Network

Claire Barnett
Healthy Schools Network

Karen Joy Miller
**Huntington Breast Cancer Action
Coalition, Inc.**

Brian Imus
Illinois PIRG

Lin Kaatz Chary
Indiana Toxics Action

Kathleen Schuler
**Institute for Agriculture and
Trade Policy**

LaMont Byrd
**International Brotherhood of
Teamsters**

Shana Ortman
**International Campaign for
Justice in Bhopal**

John Morawetz
**International Chemical Workers
Union Council/UFCW**

Elizabeth Crowe
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Tiernan Sittenfeld
League of Conservation Voters

Anne Rolfes
Louisiana Bucket Brigade

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Maine Labor Group on Health

Sarah Standiford
Maine Women's Lobby

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Maryland PIRG

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Coalition**

**Massachusetts Green Jobs
Coalition (MAGJC)**

**Massachusetts Interfaith Power
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**Natural Resources Council of
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Tom Smith
Public Citizen Texas

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**Science and Environmental
Health Network**

Kathleen Burns
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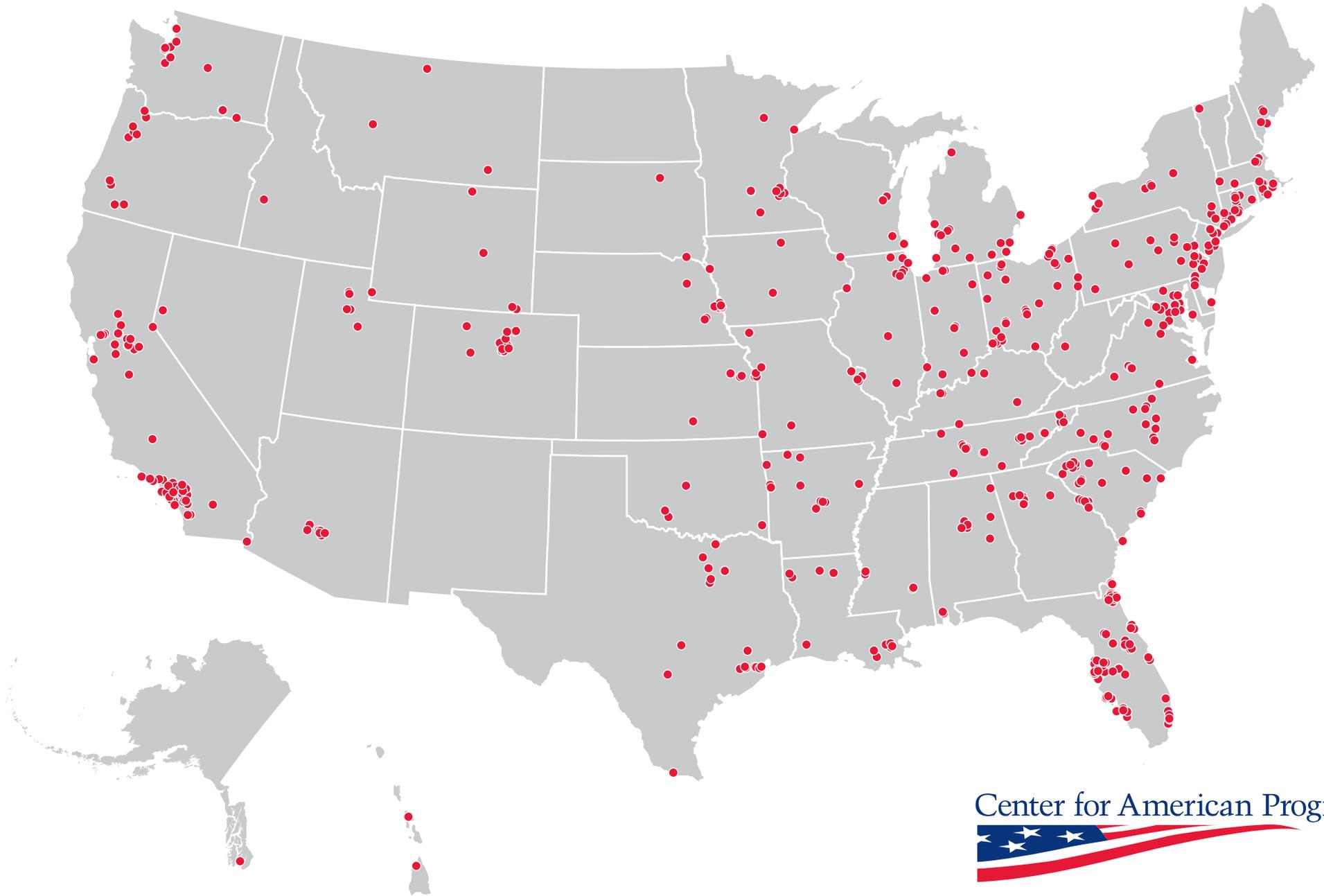
Gail Bateson
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9/11 Widow

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Protecting Americans from Toxic Terrorism

554 Water Utilities No Longer Use Extremely Hazardous Substances



Center for American Progress

