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United States Environmental Protection Agency

Solid Waste and Emergency Response (5502G)

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Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Success In Brief

Cleanup Begins at Wells G&H, One Year After Landmark New England Settlement

Site Description: Two municipal drinking water wells located in Woburn, Massachusetts.

Site Size: 330 acres

Primary Contaminants: Volatile organic compounds (benzene, PCE, TCE), organics, lead, pesticides, PCBs, PAHs

Potential Range of Health Risks Without EPA Cleanup: Skin irritation, increased risk of cancer resulting from contact with and ingestion of contaminated soil, sediments, or ground water

Nearby Population Affected: 36,000 residents in Woburn

Ecological Concerns: Effects of contaminated river sediments on wildlife and invertebrates

Year Listed on the NPL: 1982

EPA Region: I

State: Massachusetts

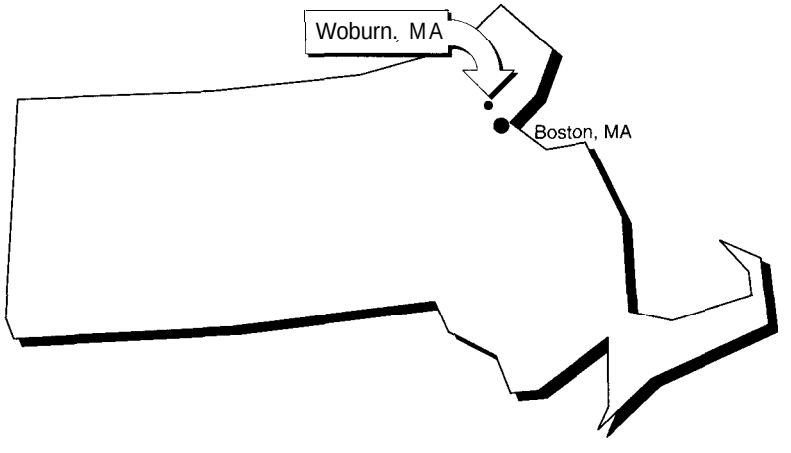
Congressional District: 4

In July 1991, The U.S. Environmental Protection Agency (EPA) negotiated a record-breaking Superfund settlement for cleanup of municipal wells "G" & "H" in Woburn, Massachusetts. One year later, comprehensive cleanup activities have begun at four of the site's five property areas. Contamination of the wells was discovered in 1979 when local residents suspected that an unusually high incidence of childhood leukemia was linked to drinking water. EPA's Superfund enforcement efforts yielded a resolution in which:

- Settling parties agreed to a cleanup worth approximately $70 million, the largest Superfund settlement in New England. The agreement directs cleanup of four properties simultaneously;
- EPA achieved this record settlement in only four months of negotiations; and
- Initially recalcitrant polluters realized they were better off cooperating with the Superfund process, and are working with both EPA and the community as partners.

The Wells G & H Site

City police discovered abandoned drums at the site, which is located in east Woburn, Massachusetts. Two municipal wells were contaminated, leading to EPA investigation and cleanup.



The Site Today

As of September 30, 1992, two of the four settling parties' began pumping and treating contaminated ground water. Excavation of contaminated soil is underway at two other properties.

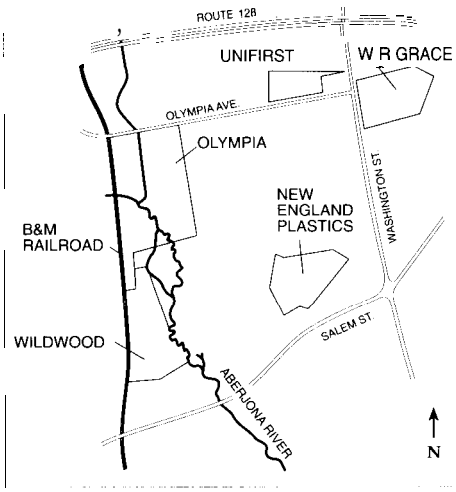
Under the settlement, the companies agreed to clean up the sources of pollution at four of the five site properties. Negotiations are taking place between EPA and parties associated with the fifth property.

A Site Snapshot

The Wells G & H site includes two municipal wells (G & H), 330 acres of land surrounding the wells, and a part of the Aberjona River. The Aberjona River flows through the site and into the Mystic Lakes. Wetland areas are found on both sides of the river. The site is located in east Woburn, Massachusetts, a small city of 36,000 people about 12 miles northwest of Boston.

Within the site boundaries, the area surrounding Wells G & H is used for several purposes including light industry, commercial business, industrial parks, residences, and recreation. The area is surrounded by industrial and commercial property to the north, and residential property to the south.

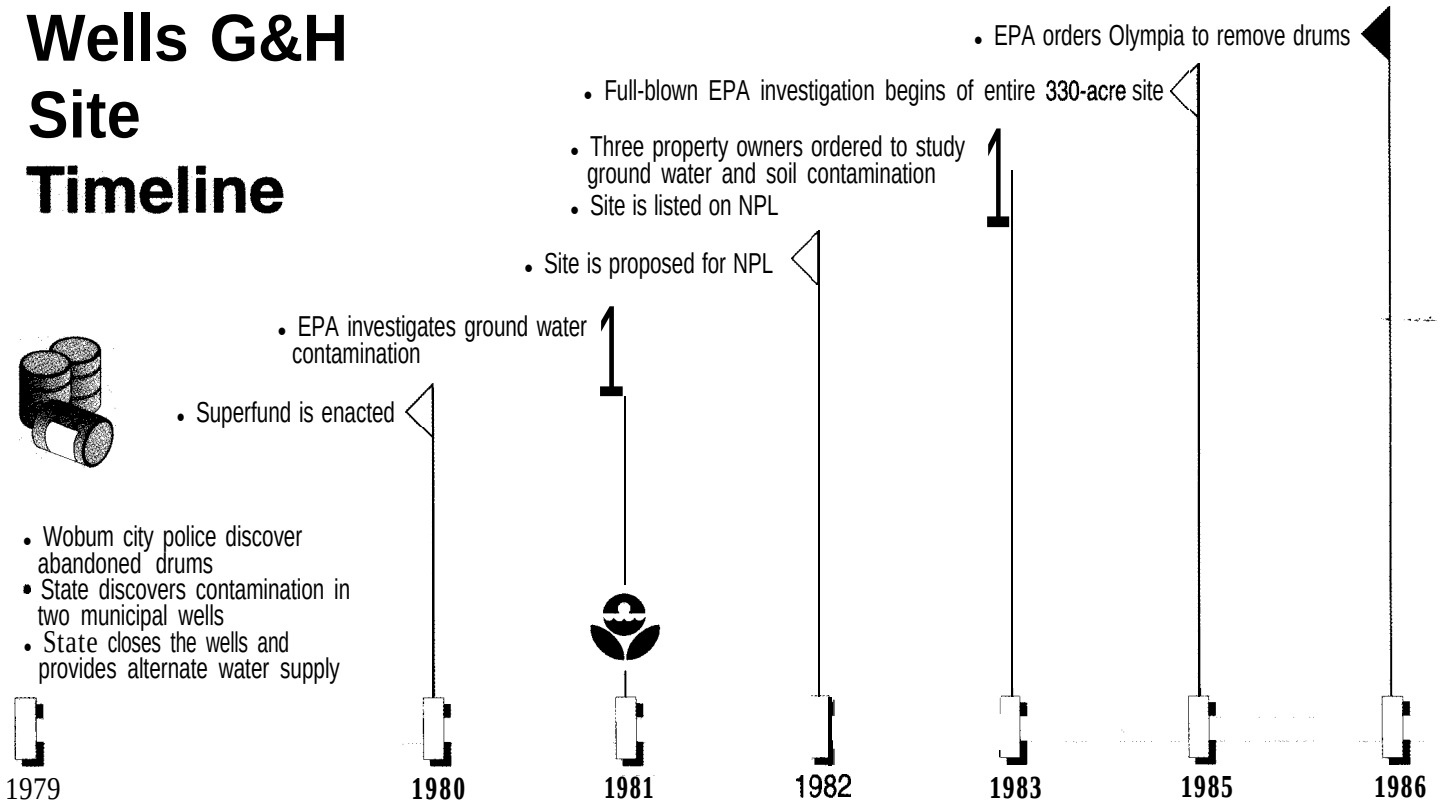
The property owners primarily liable for the contamination of Wells G & H are: W.R. Grace,



UniFirst Corporation, New England Plastics, Olympia Nominee Trust, and Wildwood Conservation Corporation. Beatrice Foods is also a liable party; the former Beatrice property has since been purchased by Wildwood. A combination of illegal dumping and accidental spills on these properties created a variety of pollution problems.

The ground water at the site is contaminated with volatile organic compounds (VOCs) like trichloroethylene (TCE). Sediments in the Aberjona River are contaminated with polynuclear aromatic hydrocarbons (PAHs) and heavy metals such as chromium, zinc, mercury, and arsenic. Soil is contaminated with PAHs, polychlorinated biphenyls (PCBs), VOCs, and lead. Exposure to contaminated soil, river sediment, or ground water may cause an increased risk of cancer.

Wells G&H Site Timeline



Superfund Responds to Tragic Contamination

State Moves to Protect Citizens

Opened by the City of Woburn in the mid-1960s, Wells G & H were tapped to supplement the existing municipal water supply. Although there are no reliable records indicating how often the wells operated, local officials estimate that the wells provided **30%** of the municipal water supply until 1979.

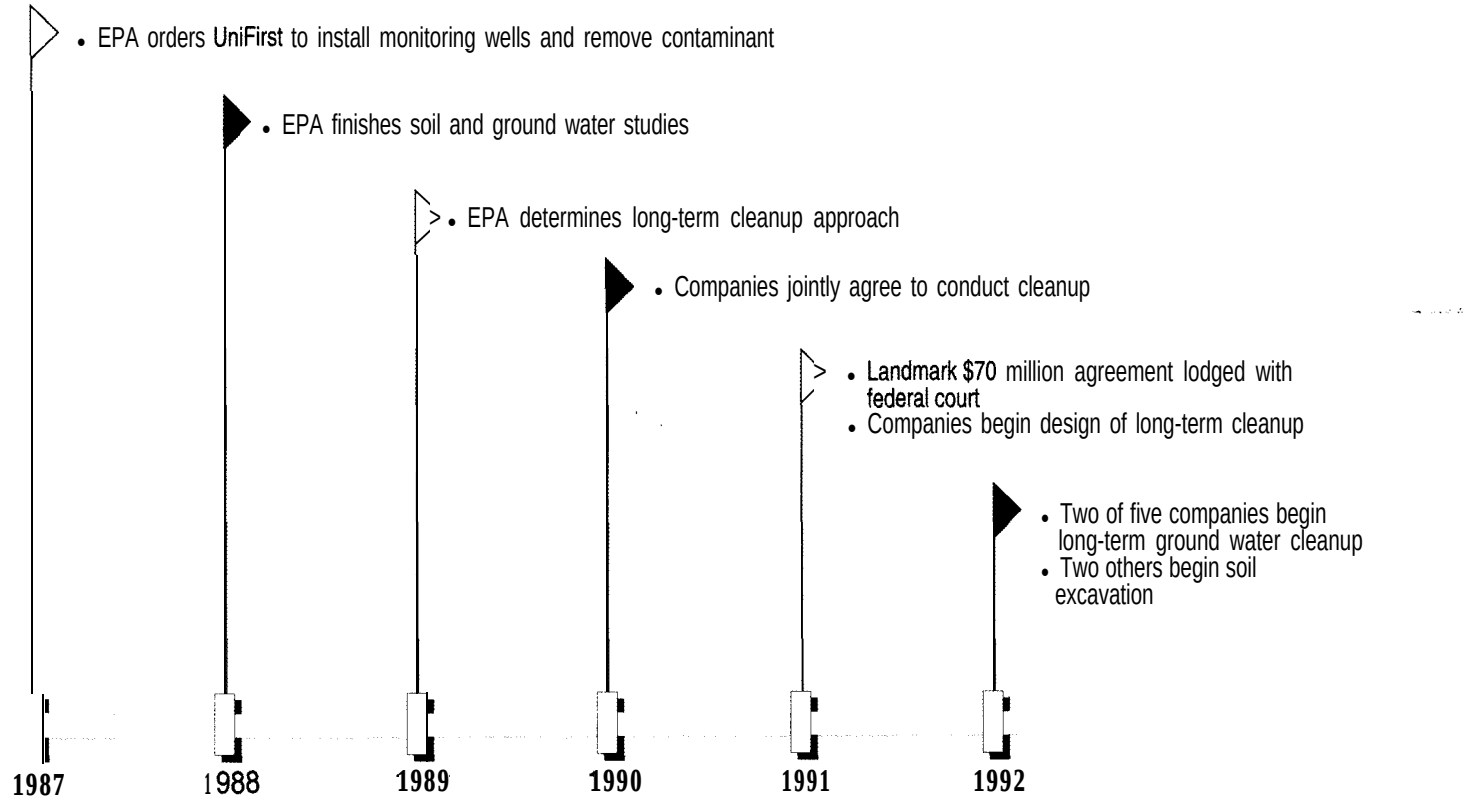
At that time, citizens complained of the bad taste and odor of their drinking water. Investigations by city police turned up nearly two hundred 55-gallon drums of industrial waste that were abandoned on a vacant lot near the wells. Subsequent testing by the Massachusetts Department of Environmental Protection revealed high levels of TCE and other industrial solvents contaminating the ground water. The wells were shut down in 1979, and the City of Woburn re-enacted an agreement with the Massachusetts Water Resource Authority to permanently supply residents with safe drinking water.

Superfund Sets Cleanup in Motion

In April 1980 -eight months before Superfund was enacted — a public meeting was organized by a local citizens group. This meeting brought together EPA and the Massachusetts Department of Environmental Quality Engineering (MEQE), to discuss with citizens the pollution of Wells G & H. At the meeting, EPA announced its intent to study the extent of contamination at the site.

About this time, the community also became aware of what appeared to be a cluster of childhood leukemia cases near the site. During a public meeting, cases of childhood leukemia were identified, several within a small neighborhood near the wells. Citizens also were concerned by the elevated rate of birth defects and cancer in the local population, and suspected that their exposure to contaminated drinking water had caused these illnesses. Community concerns regarding environmental hazards sparked the formation of the citizens group, For A Cleaner Environment (FACE) in October 1979. FACE subsequently became a voice for the citizens of Woburn on the environmental and public health impacts of the site.

In 1982, eight families who had lost children to leukemia filed a highly publicized civil suit against



some of the alleged polluters of the site. National and local media followed the case, keeping the focus on issues of liability. EPA faced a challenging situation at the site because of this coverage. Site investigations were initiated in an emotionally charged atmosphere, coupled with friction among the polluters as some denied responsibility for the ground water contamination.

In December 1982, the site was proposed for the National Priorities List (NPL), EPA's roster of hazardous waste sites eligible for comprehensive cleanup under the Superfund program. In September 1983, EPA used its enforcement authority under Superfund and the Resource Conservation and Recovery Act (RCRA) to order the following cleanup actions:

- In 1983, EPA ordered three property owners (W.R. Grace, Beatrice Foods, and UniFirst) to fully study the nature and extent of contamination on their properties.
- In 1985, EPA ordered Wildwood Conservation Corporation to put up a fence and hire a 24-hour security guard to prevent entry by the public to the contaminated soil.
- In 1986 and 1987, EPA issued two orders to Olympia Nominee Trust to remove all drums and debris from the western portion of its property to an off-site, licensed facility.
- Also in 1987, EPA ordered UniFirst to install monitoring wells and remove pure tetrachloroethene found in a well on the property.

In September 1988, EPA concluded its own detailed investigations, which demonstrated that ground water contamination specifically came from five properties located around the municipal wells. The following September, after modifying proposals based on public comments, EPA selected its long-term approach for the site.

An Innovative Cleanup

The plan calls for cleanup of soil and ground water using three different methods:

- Some of the contaminated soil will be cleaned in place through a process called vacuum extraction. This innovative technology uses vacuum pumps to draw air out of the soil. The VOCs trapped in the dirt are suctioned out through wells installed around the site. The air passes through a chamber where contaminants are filtered out, and the treated air is released. This technology minimizes damage to environmentally sensitive areas, and reduces the potential for exposure to site contaminants during treatment.
- The areas of the site that are contaminated with PCBs, PAHs, and pesticides cannot be treated effectively with vacuum extraction. These areas will be excavated and treated in an off-site licensed hazardous waste incinerator.
- The ground water will be pumped and treated by various methods. Contaminants will be removed in separate treatment plants designed to address the particular mix of contamination present at each site. Ultraviolet oxidation, an innovative treatment, is one method that will be used to remove volatile organics from ground water. UV radiation is combined with ozone, hydrogen peroxide, or both; its main advantage is that only carbon dioxide and water are released during the treatment phase.

As of September 30, 1992, just over one year after signing the agreement, W.R. Grace and UniFirst have begun long-term ground water cleanup at their respective site areas, and Wildwood and New England Plastics have begun soil excavation.

EPA Reaches Record-Breaking Settlement

A cooperative effort that now exists between EPA and the polluters would not have occurred without EPA's initial use of Superfund enforcement tools to set the cleanup process in motion.

Even with the civil litigation and resulting friction between the companies, EPA negotiated in only four months the largest Superfund settlement in the history of New England. U.S. Attorney General Scott Harshbarger noted the significance of the settlement: "As a result of the cooperative effort, the cost of undoing the environmental damage will be shouldered by

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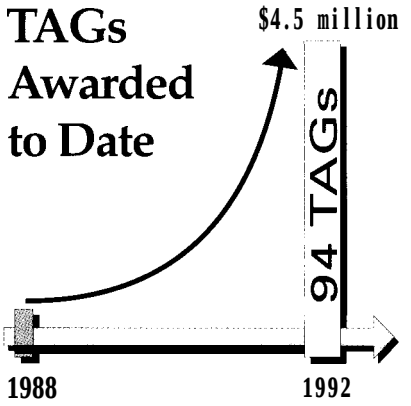
TAG'ed for Success

What is a Technical Assistance Grant?

When Congress amended the Super-fund law in 1986, EPA identified the need for greater involvement by communities affected by hazardous waste sites. The Technical Assistance Grant (TAG) Program provides qualified local groups with up to $50,000 to help them hire independent technical advisors. These advisors interpret the technical elements of cleanup so that residents can make more informed decisions about the remedy selected for a site.

The community group contributes 20% of the total costs of the project and manages the TAG for an average of three years. Only one TAG is awarded per Superfund site.

Ideally, technical advisors should be experts in chemistry, engineering, epidemiology, hydrology, hydrogeology, or other advanced sciences, and be able to translate the contents of technical documents to plain English. The consultant may assist the group or community in: (1) reviewing site-related documents, whether produced by EPA or others; (2) meeting with the community to explain technical information; (3) communicating the group's site-related concerns; (4) disseminating interpretations of technical information to the community; and (5) participating in site visits, when possible. The technical advisor can help the community gain a better understanding of cleanup activities.



Superfund Responds

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the responsible parties, not the taxpayers."

EPA Regional Administrator Julie Belaga remarked, "After a relatively short period of negotiations, we achieved agreement on a record-setting settlement that lets us begin the comprehensive cleanup owed to the people of Woburn."

Under the terms of the settlement, the companies are:

- Performing the cleanup, valued at $58.4 million;
- Financing EPA's monitoring of all cleanup activities, valued at $6.4 million;
- Performing a study of the area immediately surrounding Wells G & H; and
- Reimbursing EPA for its past investigation costs, valued at $2.65 million. In total, the companies will perform cleanup work valued at almost $70 million.

Dialogue Aids Cleanup Process

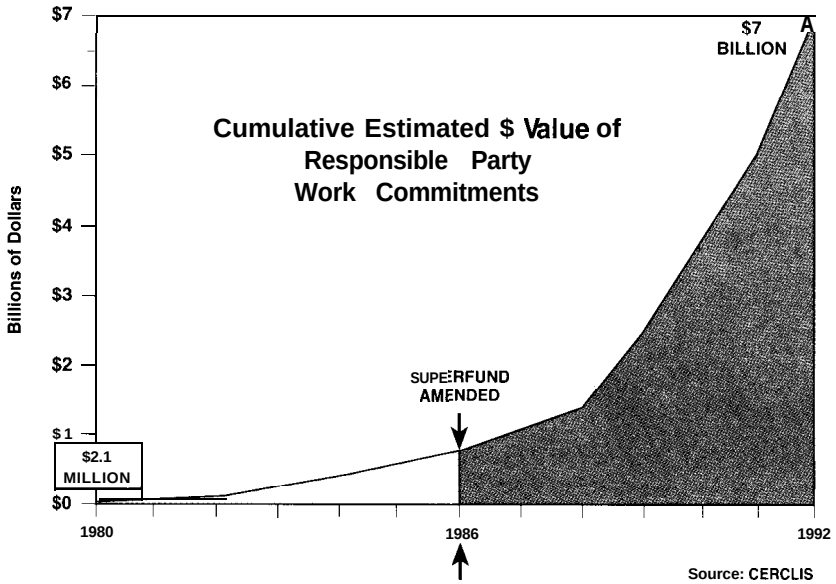
There has been a great deal of community concern and involvement associated with the Wells G & H site. At each stage in the cleanup, EPA kept the public informed and addressed concerns through informational meetings, fact sheets, and press releases.

In 1989, EPA awarded the community a Technical Assistance Grant (TAG), enabling residents to hire a technical advisor to help them participate more actively in the decision-making process. Using this grant, the site workplans and all EPA documents are being reviewed and commented on by the citizens' group, FACE.

Despite the emotional issues surrounding the Wells G & H site, a steady dialogue between the responsible parties, EPA, and the neighboring community is facilitating the long-term cleanup.

Private Party Cleanup Commitments

The payment of $70 million to clean up the Wells G&H site is just one example of an increasing national trend toward responsible party settlements . Total private party commitments are currently valued at $7.4 billion, with more than two-thirds of this amount settled in the last four years. This trend is due largely to two factors. First, after many years of court battles over pollution liability, the courts now have much clearer precedents for judging a party's responsibilities at a site. Second, EPA's "Enforcement First" policy has led to an increased use of tough legal tools to make polluters pay. Thus, potentially responsible parties are now much more likely to cooperate with EPA than in the early days of Superfund.



Success at Wells G&H

Following the contamination of two municipal wells in Woburn, Massachusetts, EPA responded by aggressively pursuing polluters and compelling them to take responsibility for the entire cleanup.

By signing a July 1991 agreement, the property owners consented to the largest Superfund settlement in New England history. Such enforcement underscores the continued importance of and need for EPA's Superfund program.

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