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DEADLY DELAY:

Five Years of Inaction at the Woburn Superfund Sites

CONGRESSMAN EDWARD J. MARKEY

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STATEMENT OF EDWARD J. MARKEY

November 26, 1985

THE REPORT I AM RELEASING TODAY DOCUMENTS IN SHOCKING DETAIL THE PATH OF DELAY AND INACTION WHICH THE ENVIRONMENTAL PROTECTION AGENCY FOLLOWED AT THE WOBURN HAZARDOUS WASTE SITES, AND OTHER SITES THROUGHOUT MASSACHUSETTS AND THE NATION. IT SHOWS HOW THE RESIDENTS OF WOBURN, READING AND WINCHESTER REMAIN PAWNS IN EPA'S TRAGIC GAME OF DELAY. THIS REPORT IS NOTEWORTHY SINCE EPA'S FIVE-YEAR SUPERFUND CONTRACT RECENTLY ENDED, AND THE LACK OF ACTION AT THE WOBURN SITES MAKES IT CLEAR THAT IT'S TIME TO RENEGOTIATE THE TERMS OF EPA'S CONTRACT.

NEXT WEEK, THE HOUSE OF REPRESENTATIVES WILL BEGIN DEBATE ON SUPERFUND LEGISLATION. AS CONGRESS BEGINS THIS PROCESS, I THINK IT IS VITAL THAT WE REVIEW EPA'S JOB PERFORMANCE AT TWO OF THE FIRST HAZARDOUS WASTE SITES EVER IDENTIFIED: THE INDUSTRI-PLEX SITE AND WELLS G AND H, BOTH IN WOBURN.

THE INDUSTRI-PLEX SITE HAS RECEIVED NATIONAL MEDIA ATTENTION, WAS A FOCUS OF THE CONGRESSIONAL HEARINGS WHICH LED TO THE ORIGINAL SUPERFUND PROGRAM, AND WAS ONE OF THE FIRST SITES IDENTIFIED BY THE EPA. THEREFORE, INACTION IN THIS CASE REPRESENTS A BROAD INDICTMENT OF EPA. IF THIS SITE, THE WORST SITE IN NEW ENGLAND AND NUMBER 5 ON THE 850 SITES ON THE NATIONAL LIST, HAS SUFFERED FROM DELAY, ONE CAN ONLY GUESS AT WHAT HAS HAPPENED AT LESSER KNOWN SITES

MY INVESTIGATION SHOWS EPA HAS BEEN SO INEFFECTIVE AT CLEANING UP TOXIC DUMPS THAT CHILDREN CAN PLAY ON THE MOST HAZARDOUS TOXIC DUMP SITE IN NEW ENGLAND. YOUTHS ARE RIDING DIRT BIKES ACROSS THE CHEMICAL LANDSCAPE, INHALING TOXIC DUST. TWENTY THOUSAND PEOPLE SPEND THEIR WORKDAY WITHIN ONE MILE OF THIS POISONOUS PLAYGROUND. POLLUTED GROUNDWATER IS SEEPING STEADILY SOUTHWARD TOWARDS THE NEIGHBORING COMMUNITY OF WINCHESTER. AND THE STENCH IN THE AIR HAS REGULARLY DRIFTED EASTWARD INTO THE HOMES OF READING.

IN THE ENTIRE UNITED STATES, ONLY FOUR OTHER SITES RANK HIGHER ON EPA'S LIST OF PRIORITY SITES FOR CLEANUP THAN INDUSTRI-PLEX. YET, HALF A DECADE HAS ALREADY PASSED SINCE CONGRESS EMPOWERED EPA TO CLEAN UP THE SITE AND PROTECT THE PEOPLE FROM THIS TOXIC HEALTH HAZARD. I FEAR THAT ANOTHER FIVE YEARS WILL PASS UNDER EPA'S SLOW-MOTION CLEANUP SCHEDULE UNLESS STRICT DEADLINES ARE IN PLACE.

EPA'S BUNGLING IS A MASSIVE FAILURE OF THE SUPERFUND PROGRAM, WHICH WAS LAUNCHED WITH MUCH FANFARE AND PROMISE IN 1980, BUT HAS DELIVERED PRECIOUSLY LITTLE BY 1985.

TO THE RESIDENTS OF WOBURN, READING, WINCHESTER, AND OTHER SURROUNDING COMMUNITIES, EPA'S PITIFUL RECORD IS A POWERFUL DEMONSTRATION OF WHY MANY AMERICANS HAVE LOST FAITH IN THE ABILITY OF THIS ADMINISTRATION TO CONTROL CORPORATE MALFEASANCE.

TO WOBURN PARENTS, IT IS AN EVER PRESENT, FRIGHTENING THREAT TO THE HEALTH OF THEIR CHILDREN.

THE CONCLUSIONS OF THIS REPORT ARE STARTLING:

1. THE SUPERFUND LAW PROVIDED AUTHORITY FOR CORRECTIVE ACTION FOR FIVE YEARS, BUT EPA HAS NOT EVEN STARTED CLEANUP AT EITHER WOBURN SITE. THE AGENCY'S MAJOR PHYSICAL ACTION WAS MERELY TO PUT A FENCE AROUND INDUSTRI-PLEX. THE FENCE HAS BEEN KNOCKED DOWN OR COLLAPSED IN NUMEROUS PLACES.

2. THE ORIGINAL SUPERFUND LAW EXPIRED IN OCTOBER 1985, BUT EPA WILL NOT EVEN BEGIN TO DESIGN A CLEANUP PROGRAM UNTIL FEBRUARY, 1986. CLEANUP DESIGNS AT WELLS G AND H PROBABLY WILL NOT BEGIN UNTIL FEBRUARY, 1987.

3. EVEN UNDER EPA'S SCHEDULE, THE AGENCY WILL NOT COMPLETE CLEANUP AT INDUSTRI-PLEX UNTIL FEBRUARY, 1990 — NINE YEARS AFTER THE SUPERFUND LAW WAS PASSED! CLEANUP AT WELLS G AND H IS ESTIMATED TO TAKE UNTIL APRIL 1989.

4. EPA'S STAFFING LEVELS ARE INADEQUATE IN LIGHT OF THE DANGERS AT CHEMICAL SITES. EPA'S REGION I OFFICE ONLY HAS 28 PROJECT OFFICERS TO COVER THE 57 PROPOSED AND FINAL SUPERFUND SITES IN NEW ENGLAND. I HAVE FAITH IN THE COMPETENCE OF THE WOBURN PROJECT OFFICER, RICK LEIGHTON, BUT THE PROBLEM IS THAT EPA NEEDS HUNDREDS LIKE HIM TO ADMINISTER THE PROGRAM EFFECTIVELY.

FINALLY, I THINK A POWERFUL LESSON CAN BE DRAWN FROM OUR LOCAL EXPERIENCE THAT APPLIES TO EPA'S RECORD ACROSS THE NATION. UNDER ANNE BURFORD AND RITA LAVELLE, EPA WAS AN AGENCY THAT WOULD RATHER TAKE CHEMICAL DUMPERS TO LUNCH THAN TO COURT.

ALTHOUGH THE WORST ABUSES ENDED WITH ANNE BURFORD'S RESIGNATION, SINCE HER DEPARTURE EPA HAS MOVED AT SNAIL'S PACE IN CLEANING UP SUPERFUND SITES. EPA HAS DESIGNATED OR PROPOSED 850 SITES FOR THE NATIONAL PRIORITY LIST, WHICH MAKES AN ABANDONED CHEMICAL DUMP ELIGIBLE FOR CLEANUP WITH SUPERFUND MONEY. UNFORTUNATELY, EPA HAS CLEANED UP A PALTRY SIX SITES, AND ONE OF THOSE SITES BEGAN LEAKING HAZARDOUS CHEMICALS AGAIN INTO A MAJOR RIVER IN PENNSYLVANIA FOLLOWING HUURRICANE GLORIA.

I AM ISSUING THIS REPORT ON THE EVE OF CONGRESSIONAL CONSIDERATION OF A NEW SUPERFUND BILL. THE MESSAGE OF THIS REPORT IS CLEAR AND URGENT. CONGRESS MUST BEGIN TO HOLD EPA ACCOUNTABLE BY PASSING LEGISLATION WHICH IMPOSES FIRM DEADLINES AND STANDARDS ON THIS WAYWARD AGENCY. IT IS A PLEA FOR A BILL WHICH INCLUDES A SPECIFIC MANDATE FOR SWIFT ACTION WHICH EPA CANNOT CONTINUE TO EVADE.

THERE ARE THOSE WHO CONTINUE TO ARGUE THAT EPA MUST HAVE "FLEXIBILITY." I URGE SUCH PEOPLE TO READ THIS REPORT. WOBURN IS NOT AN ISOLATED EXAMPLE. I HAVE SINGLED OUT WOBURN ONLY BECAUSE IT INCLUDES THE WORST SITE IN NEW ENGLAND. BUT "FLEXIBILITY" HAS BEEN USED AS A FIGLEAF FOR MASSIVE DELAY ALL OVER OUR COUNTRY. THE PACE OF SUPERFUND CLEANUP IS A NATIONAL DISGRACE.

IT IS TRAGIC THAT EPA HAS FAILED TO RESPOND TO A KNOWN HEALTH HAZARD. IT WOULD BE EQUALLY TRAGIC IF CONGRESS FAILS TO RESPOND TO A KNOWN, DOCUMENTED POLICY FAILURE. THE FACTS ARE PLAIN. IT REMAINS FOR CONGRESS TO MUSTER THE WILL TO CHANGE THE FRIGHTFUL COURSE OF TOXIC EVENTS.

END

INTRODUCTION

The Environmental Protection Agency is so ineffective at cleaning up toxic dumps that children can play on the most hazardous toxic dump site in New England. Youths are riding dirt bikes across the chemical landscape, inhaling toxic dust. Truck drivers are casually entering the site for private purposes through fallen fences, opening new chemical sores and raising dust clouds which are borne off the site by the wind to enter the buildings and lungs of unlucky neighbors. Twenty thousand people spend their workday within one mile of this poisonous playground. Polluted groundwater is seeping steadily southward towards the neighboring community of Winchester, and the stench in the air has regularly floated eastward into the homes of the citizens of Reading.

The site is called Industri-Plex. In the entire United States, only four other sites rank higher on EPA's list of priority sites for cleanup. Yet, half a decade has already passed since Congress empowered EPA to clean up the site and protect my constituents from this toxic health hazard, and half a decade more will pass under EPA's slow-motion cleanup schedule.

This site is located in Woburn, Massachusetts, a city of 37,000 people in the district I represent. Another site, also in Woburn, includes chemically-poisoned drinking wells which may explain an abnormal outbreak of childhood leukemia in the city.

EPA's efforts to protect Woburn from toxic wastes makes a snail look swift.

To this Congressman, EPA's bungling is a massive failure of the Superfund program launched with such fanfare and promise in 1980.

To the citizens of Woburn, Reading, Winchester, and other surrounding communities, it is a powerful demonstration of why people have lost trust in public officials to control corporate malfeasance.

To a Woburn mother, it is an ever present, frightening threat to the health of her children.

And to the children who have already wandered unknowingly onto the Industri-Plex site, it could very well mean that disease is already attacking their respiratory systems.

The conclusions of this report are startling:

—The Superfund act provided authority for corrective action for five years, but EPA has not even started cleanup at either Woburn site. The agency's major physical action was merely to put a fence around Industri-Plex. The fence has been knocked down or collapsed in numerous places. Other EPA actions have been limited to paper studies.

—It took until December 1982 for EPA to place Industri-Plex on a final National Priorities List, and Wells G and H were not finally listed until September 1983.

—The original Superfund act expired in October 1985, but EPA will not even begin to design a cleanup program until February 1986. Cleanup design at Wells G and H probably will not begin until February 1987.

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—Even under EPA's schedules, the agency will not complete cleanup at Industri-Plex until February 1990, over nine years after the Superfund law was passed. Cleanup at Wells G and H is estimated to take until April 1989.

—But even EPA's lethargic timetables may be overoptimistic. The agency claims it can complete Superfund cleanup feasibility studies in 18 months. But it will take EPA at least 34 months at Industri-Plex, and 35 months at the Wells—nearly twice the official estimate—to complete such studies at these sites.

—EPA's staffing levels are inadequate in light of the dangers at chemical sites. EPA's Region I office has only 28 project officers to cover the 57 proposed and final Superfund sites in New England. One project officer is responsible for both Woburn Superfund sites, and has other duties in addition.

—The Woburn sites reflect on a local scale EPA's large-scale inaction. Under Anne Burford and Rita Lavelle, EPA was an agency that would rather take chemical dumpers to lunch than to court.

—Although the worst abuses left the agency with Anne Burford's resignation, EPA since her departure has moved at a snail's pace in cleaning up Superfund sites. EPA has designated or proposed 850 sites for the National Priorities List, which makes an abandoned chemical dump eligible for cleanup with Superfund money, but has cleaned up a paltry five sites. EPA declared that an additional site, near Pittston, Pennsylvania, was cleaned up, but heavy rains from Hurricane Gloria sent oil and chemical wastes rushing back into the Susquehanna River, requiring further action.

I am issuing this report on the eve of Congressional consideration of a new Superfund bill. The message is clear and urgent. Congress must begin to hold EPA accountable by passing legislation which imposes firm deadlines and standards on this wayward agency. It is a plea for a bill which includes a specific mandate for swift action which EPA cannot continue to evade.

There are those who continue to argue that EPA must have "flexibility." I urge such people to read this report. Woburn is not an isolated example. I have singled out Woburn only because it is the worst site in New England. But "flexibility" has been used as a figleaf for massive delay all over this country. The pace of Superfund cleanup is a national disgrace.

It is tragic that EPA has failed to respond to a known health hazard. It will be equally tragic if Congress fails to respond to a known, documented policy failure. The facts are plain. It remains for Congress to muster the will to change the deadly course of toxic events.

SUMMARY

The U.S. Congress is expected to enact legislation shortly to extend Superfund, the program which directs the Environmental Protection Agency (EPA) to clean up dangerous chemical waste sites. Some proposals in Congress would amend the law to force EPA to move forward on cleaning up the 850 sites listed or proposed for Superfund action. In order to highlight the importance of this issue, this report examines the dismal effort EPA has made at two Superfund sites in Woburn, Massachusetts. The characteristics of these sites make them unique indicators for the national program. The Industri-Plex site has the highest hazard rating of any plant in New England, and is the fifth worst site in the nation. A second Woburn Superfund site consists of two wells, designated G and H, contaminated with organic chemical solvents. Studies by state and national health agencies have found a striking incidence of childhood leukemia among families that took their drinking water from these wells. However, despite this convincing evidence, the EPA has not yet begun cleaning up this potential health threat.

A review of EPA's actions reveals a deplorable record of inaction and incompetence:

1. **EPA: Local Inaction.** The initial Superfund act provided authority to clean up these sites for five years, yet EPA has not even started cleanup at either Woburn site. The agency's major physical action has been to put a fence around the Industri-Plex site; other actions have been limited to paper studies. EPA now estimates that it will complete cleanup at Industri-Plex in February 1990, ten years after the Superfund law was passed. The agency now plans to complete cleanup at Wells G and H in April 1989.

2. **EPA: National Lethargy.** The Woburn Superfund sites reflect on a local scale EPA's large-scale inaction. Since EPA cannot clean up these critical sites expeditiously, it is not surprising that its nation-wide performance is equally lethargic. EPA has designated or proposed 850 sites for the National Priorities List (NPL), which makes an abandoned chemical dump eligible for cleanup with Superfund money, but the agency has cleaned up a paltry five sites. EPA declared that an additional site, near Pittston, Pennsylvania, was cleaned up, but heavy rains from Hurricane Gloria sent oil and chemical wastes rushing back into the Susquehanna River, requiring further action.

3. **EPA: Unrealistic Schedule Estimates.** Even EPA's estimates of the time necessary to clean up the Woburn Superfund sites may be too optimistic. The agency claims that it can complete the feasibility study phase at a Superfund site within 18 months. However, the agency will take nearly twice as long to do this at the Woburn sites: 34 months for Industri-Plex and 35 months for Wells G and H. Thus, a valid rule of thumb for EPA schedule estimates may be that they should be doubled. Under these more realistic estimates, Wells G and H will not be cleaned up until November 1990, and Industri-Plex will not be completed until July 1993—both after the next Superfund act is likely to expire.

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4. Wanted: Strict Deadlines. In light of this dismal record on cleaning up Superfund sites, Congress must require EPA to meet strict schedules in completing cleanups, and not grant the agency more flexibility. As this report shows, "flexibility" under the Reagan administration has become a code word for incompetence, inaction, and indifference to a major public health hazard. Although Anne Burford has resigned, and the worst abuses are visibly gone, "flexibility" still means an EPA which proceeds at a snail's pace in cleaning up Superfund sites at Woburn and across the nation. If one measures success by the number of sites cleaned, or by the timeliness of EPA's actions, then the program is a colossal failure. Extraordinary steps will be necessary to ensure that failure does not mark the next phase of the vital effort to clean up the chemical nightmares which litter the landscape.

To that end, the message is clear: Allowing "flexibility" will not get the job done. In reauthorizing Superfund, Congress must hold EPA to strict schedules, and set strict standards for cleanup. Congress may allow flexibility in the methods of clean up to take new technologies into account, but cannot allow EPA any flexibility; deadlines are necessary.

OVERVIEW

Love Canal... Times Beach... Stringfellow Acid Pits... Valley of the Drums.. Anne Burford... Rita Lavelle... With reports of chemical contamination frequent front-page items, and with a Republican administration that misused for political purposes the program to clean up hazardous wastes, contamination from toxic chemicals remains an environmental issue of major public concern. A recent Time magazine poll found that 79 percent of U.S. citizens felt that "not enough" was being done to clean up toxic waste sites.(1)

Of the 77 billion pounds of hazardous chemical waste generated in the U.S. each year, about 80 percent is dumped into landfills.(2) Under the best of conditions, landfills eventually begin to leak within a few decades; under the worst conditions, leakage and run-off from rainwater start quickly. Chemicals escaping landfills can find their way into streams or groundwater, which now provides about half of this nation's drinking water. Thus, yesterday's toxic waste can provide today's toxic diet. Virtually every state in the union has abandoned some groundwater source as a drinking water supply because of chemical contamination. Exposure to high concentrations of toxic chemicals by ingestion, inhalation, or direct contact can damage organs such as lungs, liver, or kidneys. Exposure to lower levels can lead to cancer or genetic damage that produces birth defects.

In late 1980, the U.S. Congress made an initial response to rising public concern over the problem of chemical wastes by passing the Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund. This act gave the Environmental Protection Agency (EPA) authority to take remedial action at abandoned or uncontrolled hazardous waste sites which pose a threat to public health, and authorized \$1.6 billion, financed chiefly from taxes on petroleum and chemicals, to pay for cleanup. The law contained no deadlines.

The original Superfund act expired on October 1, 1985, nearly five years after enactment. Congress must reenact legislation to protect the public health and safety, and is now debating what amendments should be made to improve the operation of Superfund. In order to address that question, this report examines the history of past cleanup efforts as represented by two hazardous sites in Woburn, Massachusetts, including the worst site in New England. Lessons learned in these two cases should guide policy makers at all levels who are struggling to mitigate a major public health hazard.

Since 1980, recognition of the hazardous waste problem has expanded. EPA has estimated that 2000 sites may require cleanup, at a total cost of \$30 billion, but other calculations go much higher. The congressional Office of Technology Assessment, for example, estimates that 10,000 sites may require cleanup over the next 50 years, at a total cost of at least \$100 billion.(3)

One issue which Congress must decide in reauthorizing Superfund is whether to require EPA to meet strict schedules in completing cleanups. An examination of the agency's past history reveals that proceeding without deadlines has been an invitation for delay, delay, and delay, and has been detrimental to the American people. During the Reagan administration, a plea for "flexibility" became a code word for inaction and indifference to a major public health hazard. Under Anne Burford, "flexibility" produced an agency that was more interested in taking chemical polluters to lunch than to court. Although the worst abuses of the Burford administration stopped when she resigned, "flexibility" since her departure has produced an EPA which proceeds at a snail's pace in cleaning up hazardous waste sites. EPA has designated or proposed 850 sites for the

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National Priorities List (NPL), which makes an abandoned chemical dump eligible for cleanup using Superfund money. Unfortunately, if one measures success by the number of sites cleaned, EPA's performance is a colossal failure. EPA has cleaned only 5 sites. EPA declared that an additional site, near Pittston, Pennsylvania, was cleaned up, but heavy rains from Hurricane Gloria sent oil and chemical wastes rushing back into the Susquehanna River, requiring further action.

Superfund sites in Woburn, Massachusetts reflect on a local scale EPA's large-scale inaction. One Woburn site, the Industri-Plex area, served as a dump for chemical companies operating in the region over for than 100 years. This site figured prominently in the debate over the original Superfund act in 1980. It was the second site in the nation to receive Superfund money, it was one of the first 114 in the nation to be listed as a Superfund site, and its EPA hazard rating of 72.4 (28.5 is sufficient for EPA to place a site on the NPL) makes it the worst site in New England and the fifth worst site in the nation. (Appendix IV is a list of New England Superfund sites.)

A second Superfund site in Woburn consists of two wells, designated G and H, which after a "midnight dumping" episode in 1979 were found to be contaminated with chlorinated chemical solvents. These wells, which are now closed, had previously provided about 25 percent of Woburn's drinking water. Studies by the Massachusetts Department of Public Health and the U.S. Center for Disease Control have documented that Woburn had the highest cancer death rate among all major Massachusetts cities, and found a striking incidence of childhood leukemia among families in the area served by these wells. With a hazard rating of 42.7, Wells G and H rank 28th among all Superfund sites in New England.

Yet despite the magnitude of the problem at Woburn, EPA has not even started cleanup at either of these sites. EPA's major physical action has been to put a fence around the Industri-Plex site. And even this action has been unsatisfactory: A recent inspection of the site by members of my staff found the fence down or breached in several locations. There are no warning signs posted to alert unsuspecting passers-by that they could walk onto contaminated soil. There is evidence of dirt-bike trails on the Industri-Plex site, suggesting that Woburn children may be exposing themselves to the heavy metals on site. Whatever EPA does or does not do at Industri-Plex, at least the agency can repair the fence and post warning signs to prevent direct exposure to Woburn citizens and their children.

EPA's other actions have been limited to paper studies: EPA will not begin to develop a plan for cleaning up the Industri-Plex site until early 1986, over 5 years after EPA was first given authority to act and months after the original Superfund Act expired. Cleanup of this site is now estimated to be completed in 1990. For wells G and H, EPA does not expect to begin clean up until early 1988; the estimated completion date is April 1989.

COMMUNITIES AT RISK

Woburn, Massachusetts is a city of about 37,000 people, located 12 miles northwest of Boston. It is an industrialized city, although its industry is generally light rather than the "smokestack" variety. Nearly one-third of the city's jobs are provided by manufacturing, and nearly half of the manufacturing sector payroll comes from electrical, electronic, or computer firms. The two Superfund sites in Woburn are located in the northeast section of the city. The Industri-Plex site is located at the northern end of a recently developed area. The site lies amidst an industrial park, and the Woburn Shopping Mall is less than a mile from the site. A second site consists of two wells whose water is contaminated. The wells lie just south of Industri-Plex, but the available evidence suggests that businesses outside Industri-Plex were the source of contamination.

Unfortunately, because chemical hazards do not respect political boundaries, other communities are at risk from the Woburn Superfund sites. Contaminated groundwater lies under both sites, and ultimately threatens water supplies in Winchester, a town of 21,000 to the south. Groundwater in the area of the Industri-Plex site flows south at the rate of one foot a day. The aquifer containing the contaminated groundwater runs under Winchester, and both municipal and industrial wells in that city lie in the path of the Woburn contamination.

Reading, a town of 23,000, lies to the east of Industri-Plex. Prevailing winds blow odors from the site toward Reading, and piles of decaying animal hides at Industri-Plex have been the source of an overpowering stench. Reading citizens are thus concerned that any remedial action at the site must cover the piles and treat any odors that continue to be generated. In addition, there is a need to restrict development, so that odors will not be released anew by future excavation at Industri-Plex. Lastly, the drinking water problems in Woburn have produced concern in surrounding communities over the quality of their own supplies. Although Woburn groundwater flows away from Reading, citizens feel a need for monitoring the city's wells on a continuing basis to ensure that the Industri-Plex contamination will not affect Reading water supplies.

WOBURN SUPERFUND SITES

I. Site Background

Industri-Plex Site:

The Industri-Plex site covers 250 acres in north Woburn. The site currently consists of streams and ponds, both active and abandoned manufacturing facilities, and waste deposits buried on the site. Animal hide residues are found on approximately 20 acres of the site. Investigations of the site by EPA and the Massachusetts Department of Environmental Quality Engineering (DEQE) have found waste deposits and soil contamination with elevated levels of heavy metals.

From 1853 to 1969, a number of owners, including Monsanto and Stauffer Chemical companies, operated chemical and other manufacturing operations on this site. These operations produced sulfuric acid, organic chemicals, chemicals for local tanning and paper making industries, and arsenic pesticides. Stauffer manufactured glue from animal hides. Wastes containing arsenic, chromium, lead, zinc, and copper as well as raw and tanned animal hides were deposited on the site as fill for low spots or in settling lagoons.

In 1969, the site was acquired by the Mark Phillip Trust for development of an industrial park. Construction activity in the 1970s uncovered the industrial byproducts and wastes that had accumulated over the past 130 years. The exposure of decaying hides released noxious odors, leading to citizen complaints. In addition, many of the wastes in the soil were relocated and mixed into piles near swampy areas on the property. These piles consist of animal hides and the heavy metals arsenic and lead.(4)

In response to complaints from nearby residents, the Massachusetts Department of Environmental Quality Engineering (DEQE) investigated and cited the Trust for violations of air pollution regulations. Throughout the late 1970s, the Trust repeatedly ignored court orders and agreements to halt construction.(5)

In 1979, an EPA employee driving by the site spotted construction crews filling in marshy areas on undeveloped land. Following this observation, the U.S. Army Corps of Engineers obtained a court order to stop further development activities, on the grounds that wetlands were being illegally filled. The Trust finally complied with this order, and halted construction. EPA and the Massachusetts DEQE then performed preliminary evaluations and discovered the chemical contamination on site. In October 1981, the Industri-Plex site was listed on the EPA Superfund Interim Priorities List and was added to the final National Priorities List published by EPA in December 1982.

In May 1982, Stauffer Chemical Company signed a consent agreement with EPA and DEQE to investigate the site and evaluate remedial action. Stauffer Chemical Company prepared a remedial investigation report for the site and submitted it to EPA in September 1984. This report identified the following environmental problems at the Industri-Plex site:

1. Contaminated ground water, which contains benzene and toluene. This ground water has the potential to migrate to two Woburn municipal drinking wells (Wells G and H) which are currently closed. If such migration should occur, the benzene contamination of the wells would exceed EPA drinking water standards.
2. Noxious odors caused by hydrogen sulfide gas generated by the decay of the wastes in one pile, designated the East Hide Pile.

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3. Direct contact with hazardous waste. There is the potential for human exposure due to direct contact with soil and waste deposits contaminated with elevated levels of arsenic, lead, and chromium.

EPA assigns a hazard rating to each Superfund site, which reflects the potential for human exposure due to groundwater contamination, direct contact, or other pathways. The Industri-Plex site has an EPA Hazard Rating of 72.4, which makes it the worst site in New England, and the fifth worst in the nation. A Hazard Rating of 28.5 will place a site on the National Priorities List. The major factors which give the Industri-Plex site such a high rating are the presence of persistent pollutants (heavy metals) in very large volumes (soil contamination extends over 70 acres and in some case to depths of ten feet), and the location nearby of large numbers of "targets" (an EPA term for people).

Wells G and H:

A second Superfund site also exists near the Industri-Plex site. In 1979, the Massachusetts Bay Transit Authority found a number of drums containing industrial chemicals which had been illegally dumped on the transit authority's property, just south of the Industri-Plex area. The drums contained chemicals of relatively low hazard, but subsequent investigations in May 1979 found that two nearby wells, now designated G and H, were contaminated with chlorinated organic solvents. These wells, which between 1964 and 1979 supplied approximately 25 percent of the drinking water of the town of Woburn, were then closed. This site has an EPA Hazard Rating of 42.7.

II. Illness in the area

As the information above indicates, Woburn's environmental problems were recognized before EPA's involvement with the Superfund sites. In response to the concerns of local citizens about cancer rates, the Massachusetts Department of Public Health (MDPH) investigated and in December 1979 reported that during 1974-1978, cancer deaths in Woburn were 24 percent higher than would ordinarily be expected. Moreover, Woburn had the highest cancer death rate of any community in Massachusetts with more than 20,000 people.(6)

Woburn has also suffered from a striking incidence of childhood leukemia. In January 1981 the MDPH and the U.S. Center for Disease Control, responding to information gathered by a local clergyman and pediatrician, documented an excess of childhood leukemia in Woburn. These included six cases in one six-block area in east Woburn, near wells G and H and which was served by those wells.(7) Eight families whose children developed leukemia have sued W.R. Grace and Beatrice Foods, claiming that the companies contaminated the wells, causing the leukemia. W.R. Grace admits that it used trichloroethylene, one of the chemicals detected in the wells, and that the company buried several drums of unidentified waste on its property, near the wells.

In February 1984, after the suit was filed, members of the Biostatistics Department, Harvard School of Public Health, completed a study which found a connection between drinking water from wells G and H and childhood leukemia and selected birth defects.(8) In June 1985, a scientific study panel reported to MDPH that over the previous 15 years, 19 cases of childhood leukemia had been reported in Woburn, more than three times the rate that would have been expected.(9)

III. Response of EPA

Action taken by EPA at the Woburn sites consists of the following:

At Industri-Plex

In 1979, federal agencies obtained a court order to stop further development activities, on the grounds that wetlands were being filled illegally. This action occurred before Superfund was authorized.

In August 1981, this site was the second in the nation to receive any Superfund money; \$450,000 was granted to study the extent of contamination and to develop cleanup recommendations. In October 1981, the site was one of the first 114 in the nation to be listed on the EPA Superfund Interim List. Between May 1981 and July 1983, EPA installed a fence around the site. In December 1982, the site was added to the final National Priorities List published by EPA.

In May 1982, EPA and Massachusetts DEQE reached an agreement with the Stauffer Chemical Company, under which the company would evaluate remedial alternatives. Stauffer prepared a remedial investigation study (RI) for the site and submitted it to EPA in September 1984. Stauffer then prepared a feasibility study (FS) to evaluate potential solutions for cleaning up the site.

In May 1985, EPA released the combined RI/FS for public comment, and the public comment period expired August 1985. EPA presently estimates that the feasibility study phase will end by January 1986. The agency estimates that it will begin designing a remedial program by February 1986, and will complete design by February 1987. Estimates are that remedial action will begin March 1987, and will be completed February 1990.(10) Continuing maintenance on the site may require another 15 years.(4)

At Wells G and H

In 1979, the state of Massachusetts detected 4 chlorinated organic solvents in the wells, and shut them down. Preliminary assessments of potential sources of contamination were performed in 1980. A preliminary ground water study was completed in June 1982.

EPA proposed to list the site in December 1982, and placed it on the NPL in September 1983. Also in September 1983, EPA ordered 3 companies operating in the area of the wells—W.R. Grace, J.J. Riley, and Unifirst—to investigate the groundwater in and around their property. These investigations found ground water contamination between company property and the wells, although the sources of the contamination have not been established.

The agency began an RI/FS in February 1984; it does not expect completion until January 1987. EPA estimates that remedial design will begin February 1987 and be completed January 1988. Remedial action is expected to begin in February 1988 and be completed in April 1989.(10)

Sites, p. 4.

IV. Analysis of EPA Schedules

It is instructive to compare EPA's schedule estimates with its actual performance at the Woburn sites. Figure 1 indicates the EPA's proposed schedule for each site. If the agency meets its own presently estimated timetables, it will take 34 months to complete the feasibility study phase for the Industri-Plex site, and 35 months for Wells G and H. This should be contrasted with the EPA's recent estimate that a feasibility study can be completed in 18 months.(11) Thus, EPA's actual performance at Woburn has taken nearly twice as long as its estimated time (Figure 2). If the same proportions of actual time versus estimated time are assumed, it is likely that at Wells G and H, the cleanup design will take 21 months rather than the 11 months estimated, and cleanup will require 19 months rather than the EPA estimate of 10 months. These more realistic estimates would mean that cleanup will not be complete until November 1990.

Applying the same proportion of actual to estimated times for the Industri-Plex site, cleanup design should take 22 months rather than EPA's estimated 12 months, and cleanup will take 66 months rather than the estimated 35 months. In that case, cleanup will not be complete until July 1993.

PROVISIONS OF SUPERFUND BILLS

Two different House committees, the Committee on Energy and Commerce and the Committee on Public Works and Transportation, have each passed their own major versions of a new Superfund bill. With regard to setting schedules for EPA, the provisions of each bill, and of the initial Superfund act, can be summarized as follow:

—The original 1980 Superfund act does not require EPA to meet any schedules.

—The bill reported by Energy and Commerce would require EPA to complete remedial investigations at no fewer than 600 sites by September 1990. Cleanup must begin at no fewer than 540 sites within 12 months of the completion of each site study. Under this provision, cleanup at any site, including those at Woburn, where the feasibility investigation is not presently completed, would not need to begin until September 1991, which is one year after this new Superfund bill would expire. Under this provision, the intolerable delays at the Woburn sites could be extended still further.

—The bill reported by Public Works would require EPA to begin remedial investigations on all NPL sites within 2 years of a new bill's enactment. EPA must start physical cleanup at no fewer than 150 sites per year, and within five years, must complete clean ups on all sites now listed on the NPL. If such cleanups are not completed, EPA must publish an explanation of its failure to meet the required schedules.(12)

Since EPA has stated its intention to begin cleaning up 900 sites in the next five years, the Public Works provision holds the agency to a schedule which is less stringent than its intended timetable. At the same time, it does allow EPA some latitude, in that the agency can explain to Congress if it were unable to meet schedules, in the event of an inadequacy of funds, staff, available private contractors, or other unforeseen difficulties. Since EPA's performance under the original Superfund act can charitably be described as dismal—cleanup of five sites in five years—the stricter standards of the Public Works bill are necessary to prod the agency into action.

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Appendix I
Major Milestones for the Superfund Program

December 1980: Superfund bill becomes law.

October 1981: EPA proposes initial list of 114 sites for the Superfund National Priority List (NPL).

December 1982: EPA proposes a final NPL of 418 sites.

**September 1983: EPA promulgates a final NPL of 406 sites.
At the same time, EPA proposes 133 additional sites as Update Number 1 to the NPL.**

September 1984: EPA adds 128 sites from Update 1 to the final NPL.

October 1984: EPA proposes 244 additional sites as Update Number 2 to the NPL.

April 1985: EPA proposes 26 additional sites as Update Number 3.

September 1985: EPA proposes 38 additional sites as Update Number 4.

October 1985: Original Superfund law expires.

**At this time, the NPL contains 541 final sites, and 309 proposed sites, for a total of 850.
(Numbers are not entirely consistent with the information above, since some proposed sites were added, and others were made final or removed, at dates other than those listed above.)**

Source: EPA, Office of Congressional Liaison, Telephone conversation October 22, 1985.

**Appendix II.
Chronology of Industri-Plex Site**

From 1853 to 1969, a number of chemical companies operate on the site and dump chemical waste.

In 1969, the site is acquired by the Mark Phillip Trust. In Fall 1976, the Massachusetts Department of Environmental Quality Engineering receives complaints about odors.

In 1977, DEQE issues orders of violation on odors. Over the next few years, the developer ignores numerous agency orders and citations, court orders and agreements.

In 1979, an EPA employee spots construction crews filling marsh areas on undeveloped land. The U.S. Army Corps of Engineers obtains a court order to stop further development activities, and the developer halts construction.

December 1980: Superfund becomes law. \$1.6 billion authorized.

August 1981: Industri-Plex is the second site in the nation to receive Superfund money from EPA. \$450,000 is granted to study the contamination and develop cleanup recommendations.

October 1981: Industri-Plex is one of the first 114 sites in the nation listed on the EPA Superfund Interim List.

May 1982: EPA and DEQE reach agreement with the Stauffer Chemical Company, under which the company will evaluate remedial alternatives.

December 1982: EPA lists Industri-Plex on the final National Priorities List.

May 1985: Stauffer Chemical Company completes a remedial investigation and feasibility study, which EPA releases for public comment.

October 1985: The original Superfund act expires. At this time, EPA's major physical action has been the installation of a chain-link fence around the site. Not one shovel of dirt has been overturned to clean up Industri-Plex.

February 1987: EPA estimates it will complete designing a cleanup program by this date.

February 1990: EPA estimates it will complete remedial action at Industri-Plex by this date.

October 1990: Likely expiration date of Superfund extension.

September 1991: Under the 1985 House Energy and Commerce Committee Superfund bill, cleanup of the Industri-Plex site would not be required to begin before this date.

**Appendix III.
Chronology of Wells G and H**

In 1979, following a midnight dumping episode, the state of Massachusetts finds that Wells G and H are contaminated with chlorinated organic solvents, and shuts the wells down.

December 1980: Superfund becomes law.

January 1981: The Massachusetts Department of Public Health and the U.S. Center for Disease Control report an excess of childhood leukemia in Woburn, including six cases in one six-block area which was served by Wells G and H.

December 1982: EPA proposes to include the site on the Superfund National Priorities List.

September 1983: EPA assigns the site to the final NPL. Also during this month, EPA orders 3 companies operating in the area of the wells to investigate the groundwater in and around their property. These investigations found groundwater contamination between company property and the wells.

February 1984: EPA begins a remedial investigation and feasibility study for site cleanup. This same month, members of the Biostatistics Department, Harvard School of Public Health, report a connection between drinking water from Wells G and H and childhood leukemia and certain birth defects.

June 1985: A scientific study panel reports to the MDPH that the childhood leukemia cases reported in Woburn over the previous 15 years represent more than three times the number expected.

October 1985: The original Superfund act expires. EPA has not conducted any remedial action at the site.

January 1987: EPA estimates the feasibility study will be completed by this date.

January 1988: EPA estimates it will complete designing a cleanup program by this date.

April 1989: EPA estimates it will complete remedial action by this date.

September 1991: Under the 1985 House Energy and Commerce Committee Superfund bill, cleanup of Wells G and H would not be required to begin before this date.

Appendix IV.
Final Superfund NPL Sites in New England

<u>National Ranking</u>	<u>EPA Hazard Rating</u>	<u>Site Name</u>	<u>City/County</u>	<u>State</u>
5	72.4	• Industri-Plex Woburn	MA	
11	69.2	- Nyanza Chemical Waste Dump	Ashland	MA
14	66.4	- Baird and McGuire	Holbrook	MA
16	65.6	Somersworth Sanitary Landfill	Somersworth	NH
19	65.2	Keefe Environmental Services	Epping	NH
23	63.3	Sylvester Nashua	NH	
33	61.0	McKin Company Gray	ME	
38	59.3	- W.R. Grace and Co. (Acton)	Acton	MA
75	53.6	Picillo Farm * Coventry	RI	
76	50.7	- New Bedford Site *	New Bedford	MA
80	46.8	Laurel Park, Inc. *	Naugatuck Boro	CT
84	40.4	Pine Street Canal *	Burlington	VT
106	54.8	- Plymouth Harbor/Cannon Engg	Plymouth	MA
113	54.3	Old Southington Landfill	Southington	CT
127	53.4	Ottati & Goss/Kingston Drum	Kingston	NH
150	51.4	Western Sand and Gravel	Burrillville	RI
166	49.6	L&RR, Inc. North Smithfield		RI
183	47.7	- Re-Solve, Inc. Dartmouth	MA	
193	47.2	Davis Liquid Waste	Smithfield	RI
194	47.2	Charles-George Reclamation	Tyngsborough	MA
203	46.8	Beacon Heights Landfill	Beacon Falls	CT
228	44.9	Solvents Recovery Service	Southington	CT
230	44.8	- Hocomonco Pond Westborough	MA	
248	43.2	Tinkham Garage Londonderry	NH	
251	43.2	Saco Tannery Pits	Saco	ME
253	42.9	Iron Horse Park Billerica	MA	
257	42.7	- Silresim Chemical Corp.	Lowell	MA
258	42.7	• Wells G and H Woburn	MA	
300	40.7	Groveland Wells Groveland	MA	
311	40.1	Peterson/Puritan Inc.	Lincoln/Cumberland	RI
316	39.9	Kellogg-Deering Well Field	Norwalk	CT
317	39.9	- Cannon Engineering Corp.	Bridgewater	MA
332	38.7	- PSC Resources Palmer	MA	
335	38.4	Kearsarge Metallurgical Corp.	Conway	NH
362	37.5	Savage Municipal Water Supply	Milford	NH
368	37.0	Dover Municipal Landfill	Dover	NH
374	36.7	Yaworski Waste Lagoon	Canterbury	CT
383	36.3	Auburn Road Landfill	Londonderry	NH
393	35.6	South Municipal Water Well	Peterborough	NH
394	35.6	Winthrop Landfill	Winthrop	ME
415	34.8	Old Springfield Landfill	Springfield	VT
436	34.1	Stamina Mills, Inc.	North Smithfield	RI
438	34.0	Pinette's Salvage Yard	Washburn	ME
463	32.8	- Sullivan's Ledge	New Bedford	MA
481	31.9	O'Connor Co. Augusta	ME	

* = State-designated priority site

Source: Federal Register, 49 FR 40342-40352, October 15, 1984.
EPA Superfund Docket, October 29, 1985

**Appendix V.
EPA Officials Currently Responsible for Superfund**

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Figure 1. EPA Estimated Schedules for Woburn Superfund Sites.

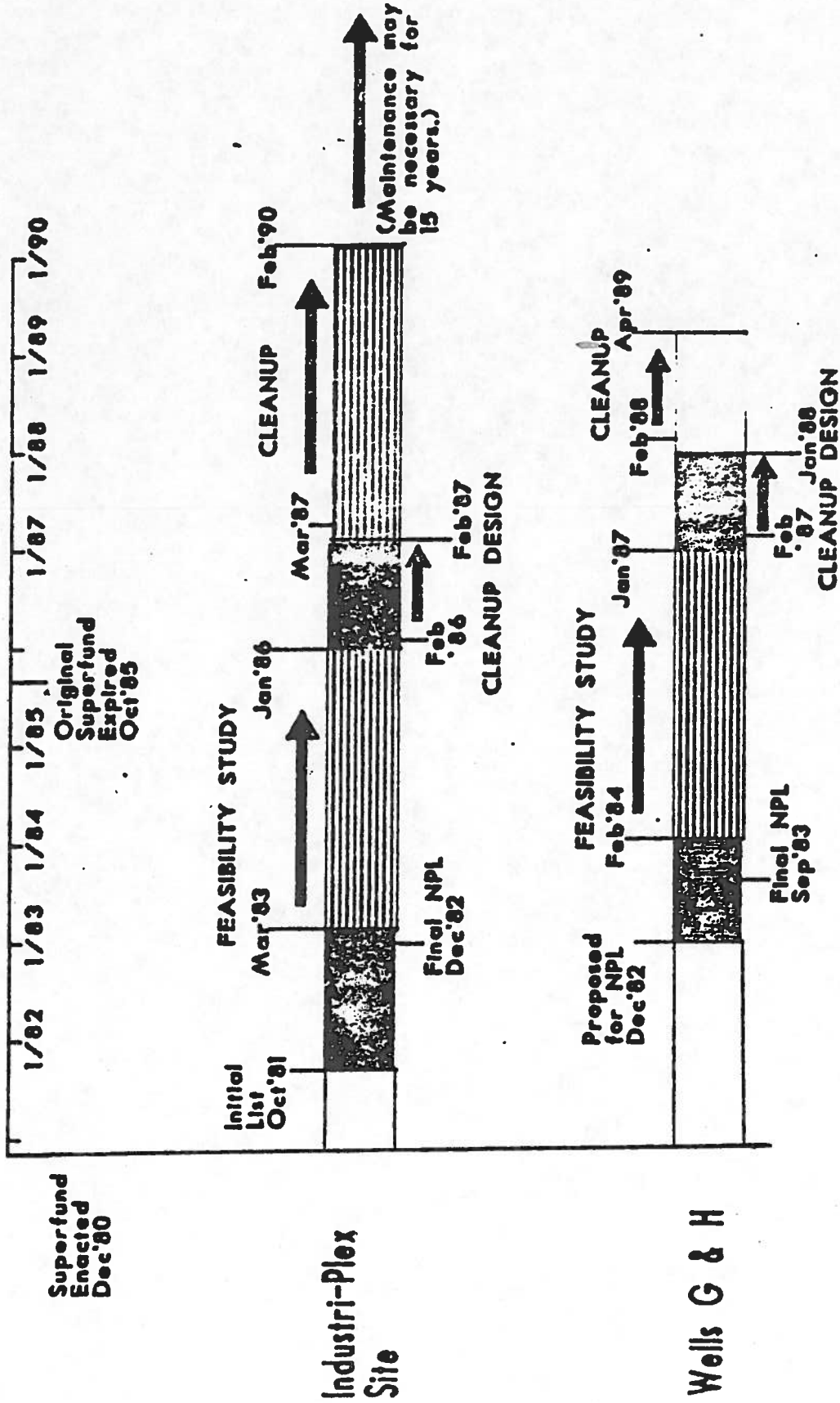
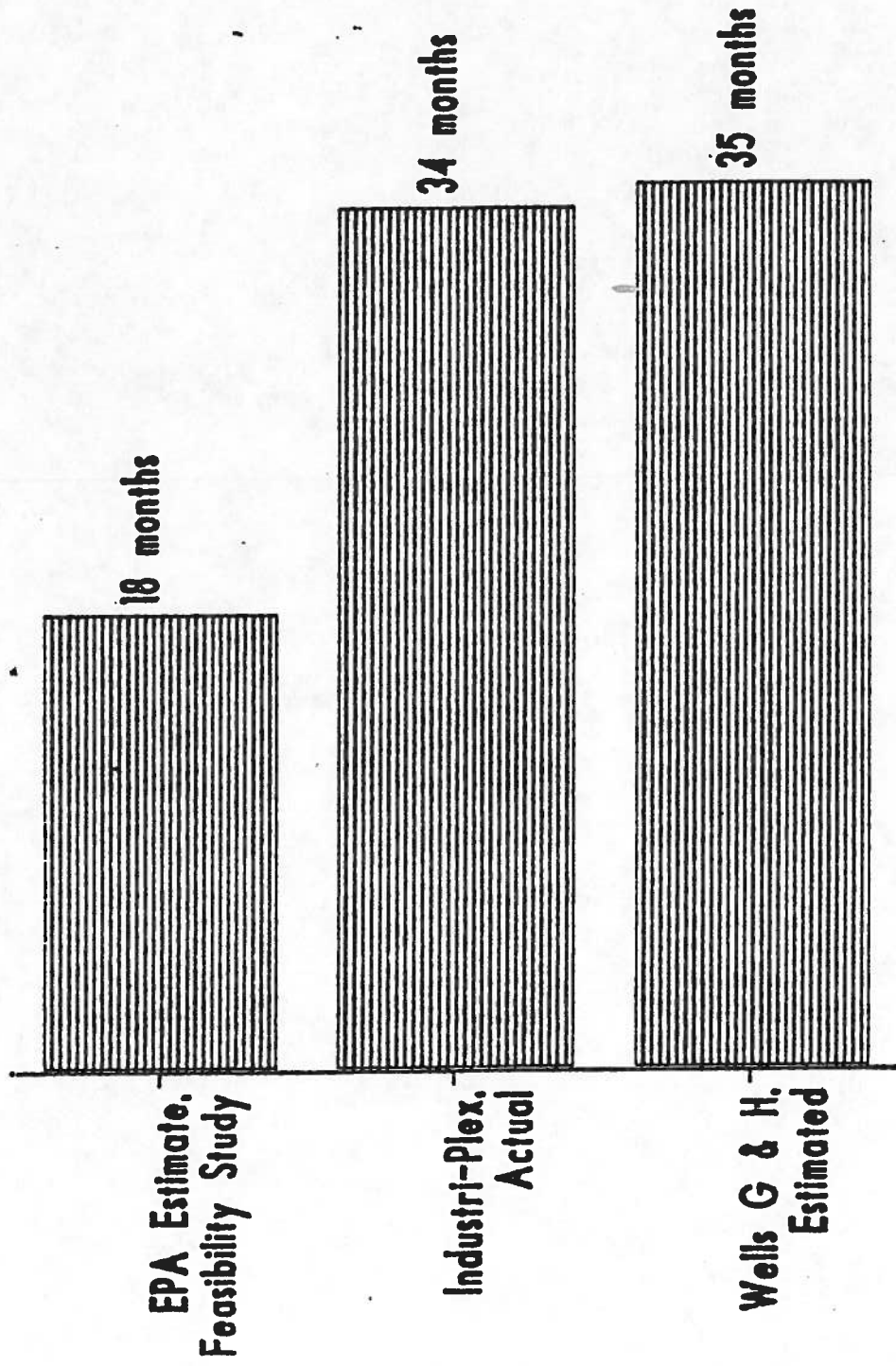


Figure 2. EPA Estimate v. Actual Performance



Source: References 10 and 11