The Future of the Superfund: Where is it Headed and How Will it Get There?

Byron Prince

This paper is a critical analysis of the Environmental Protection Agency’s Superfund program, turned 25 last year. This paper will provide a historical overview of the program’s development in managing environmental contamination. It will also discuss the more recent problems the program finds itself addressing. The corporate taxes that helped finance the Superfund Trust Fund expired in 1995. Now the question is: does the cleanup program still need $1.4 billion a year, or is it time to start cutting appropriations as the list of sites are completed? This paper will challenge the belief that current funding levels are sufficient to complete the cleanup of the remaining contaminated sites that exist throughout the nation. Specifically, five assumptions of those who argue for fewer appropriations will be thoroughly examined.

INTRODUCTION

After twenty five years of cleaning up old mines, chemical plants, landfills, rivers and other areas around the country contaminated by toxic waste, the U.S. Environmental Protection Agency (EPA), still has plenty more work to do. Existing contamination levels ensure that the costs associated with the agency’s cleanup obligations will not decline before 2010 at the very earliest, and then by only a small amount (Stevens, 2004). Even though the EPA has successfully cleaned up over 1,400 contaminated sites under the ubiquitous federal “Superfund” law, new sites continue to be discovered that are more expensive and extensive that ever. Due to the fact that the Superfund Trust Fund is empty after the industrial tax expired in 1995, the central question has become whether the cleanup program still needs appropriations of $1.4 billion a year, and if so, where is future funding going to come from? (Stevens, 2004). Is the Superfund program “ramping down” after two decades of toxic waste cleanup? This essay will contend that current funding levels are sufficient to meet the tasks assigned to the Superfund. Specifically, five assumptions of those who argue for fewer appropriations will be thoroughly examined.

LOVE CANAL INITIATES A NATIONAL DEBATE

In 1976 President Jimmy Carter declared Love Canal, located in New York, in a state of emergency. The President’s action provided federal funds to relocate a large portion of the population from the Niagara Falls community, which was built on top of former chemical landfill. In the 1940s and 1950s this landfill was the repository for an enormous amount of chemical waste. Over 21,000 tons of waste was dumped into the landfill during a ten year period (EPA, 2004). The landfill was completely covered up by 1953. In the 1960’s and into the 1970’s, residents of the Love Canal area reported odors and incidents of chemical residue in their basements and lawns. More than twenty years after the chemical landfill was covered, studies showed that chemicals had seeped up through the water table, contaminating surrounding land, sewers, creeks, and the Niagara River. This evidence, along with unusually high reported cases of miscarriages, birth defects, respiratory ailments, and cancer rates were recorded in the area. For example, the Homeowners Association found that 56% of the children born in the Love Canal area from 1974-1978 had a birth defect. State investigations found high levels of chemical contamination in the air and soil in the immediate area around the Love Canal landfill (EPA, 2004). In declaring the Love Canal area a state of emergency, the President provided federal funds to permanently relocate 250 families. Later in 1979 another 300 families in the surrounding area were relocated because of evidence showing the same health problems from chemical exposure (EPA, 2004). Love Canal sparked a serious national concern for hazardous waste contamination. What the nation learned was that Love Canal was not an isolated incident. That same year of 1979, the EPA concluded that there were thousands more inactive and uncontrollable waste and chemical spill sites in the U.S. that could pose the same health threats as Love Canal (EPA). As Senator John Heinz (R-Pennsylvania) stated:

People at Love Canal were driven from their homes. In Piritton, P.A., people lived in fear of breathing cyanide gas. In Youngville, P.A., PCB contaminants have infiltrated the soil about 100 yards from the town’s water supply. There are
thousands of Love Canals, Pittstons and Youngsvilles all over America (EPA, p.2).

Even though the problem was severe by 1980, the country had no real experience or means of dealing with the growing chemical cancer. Some years before, Congress had enacted a number of laws to prevent hazardous waste contamination. The laws served as stepping stones to move the federal agency towards finding a long-term solution to prevent sites like Love Canal. The Resource Conservation and Recovery Act (RCRA), was adopted to establish more restrictive standards on hazardous waste, ensuring close management from creation to disposal (Lee). Legislation like RCRA and The Toxic Substance Control Act (TSCA) played a part in tackling a small piece of the problem. These Acts did not, however, address the problem of cleaning up existing contamination (Lee). Senator Robert Stafford (R-Vermont) bluntly stated the issue:

If these hearings were to deal only with Love Canal or Toone, Tennessee, we would be neglecting the radium sites in Denver. And if we were to deal with the Denver sites as well, we would still be neglecting PCBs in the Hudson River and PBBS in Michigan. If we restrict ourselves to just waste, we will leave a large gap because in the chemical business one man's meat is literally another man's poison. Waste from one company is feedstock to another. What we must explore is the entirety of how and why toxics are entering the environment, whether they are injuring people, and if so, how. Then we must decide whether there should be a scheme to compensate victims, and if so, for what injuries (EPA, n.d., p.2).

THE SUPERFUND ACT

Senate and House committee hearings were held in the later half of 1979 and into 1980 to address the magnitude of the situation the nation was facing, and to begin formulating a solution (Lee, 1993). On September 19, 1980, the House passed a bill proposing the creation of a “Superfund” to focus mainly on chemical emergencies. The Senate proposed a similar bill later that year that was revised and eventually enacted. On December 11, 1980, President Jimmy Carter signed the new Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as Superfund (Lee, 1993). President Carter said it was “a landmark in its scope and in its impact on preserving the environmental quality of our country.” (EPA, 2004, p.5).

Love Canal was the perfect example of what could happen if chemical waste was not carefully managed. CERCLA was designed to address much more than just the problems faced at Love Canal. The new Act was adopted to provide comprehensive authority for the federal government to take action in all situations involving contamination (Lee, 1993). The EPA could now respond to any release or any real threat of a release of a hazardous substance, pollutant, and or contaminant into the environment. This gave the EPA the authority to act on mere suspicion or risk of contamination, such as corroding tanks or abandoned drums of any kind (Lee, 1993).

In 1980 the focus of industry was upon the Superfund Trust Fund Act, which was designed to provide the funds for the EPA’s cleanup efforts (Lee, 1993). The Trust Fund collected money from multiple taxes and court awards. The federal assessment included taxes generated from crude oil, petroleum products imported into the U.S., and specific chemicals. The rationale for this was to raise the bulk of the funds for the new program from the set of companies most likely to have generated the hazardous chemicals creating the risks to human health and the environment in the first place. Court awards came from the “parties” found responsible for substance contamination, or individuals or companies that had any participation or connection to the contamination process (Lee). The original act of 1980 authorized a trust fund of $1.6 billion, while 1986 amendments to CERCLA increased the fund amount to $8.5 billion (Lee).

The Superfund Trust Fund can be used to respond to both emergencies and long-term cleanups of contaminated areas or “sites”. Trust Funds can pay for actual cleanup costs, as well as for the EPA’s enforcement actions taken against responsible parties (Loehr, 2004). The Trust Fund was also designed to pay for certain natural resource damages, reimbursements to local governments, and claims by private parties (EPA, 2004). In many cases the trust fund has provided funds to enable the EPA to address a hazardous substance contamination immediately, rather than having to wait for a court to decide who was responsible for causing the damage. Later, when the court has identified the responsible parties, the EPA is repaid the cost of responding to the incident, and the Trust Fund is reimbursed (EPA, 2004). This provision was one of the more drastic improvements that came with CERCLA. Before its enactment, the law required that liability for any contamination be determined before any action could be taken (EPA, 2004).

THE SUPERFUND PROGRAM

An important distinction must be made about the creation of Superfund. Congress first passed the Superfund statute, but it was left up to the EPA to create the Superfund program. Due to all the attention placed on sites like Love Canal and the valley of drums in Bullitt County, Kentucky, quick and effective remedial action was expected from the EPA (Probst, 2003). It was soon realized that scientifically complex sites take an enormous amount of time, money, technology, resources, and understanding to cleanup. Quick clean up of spills and short-term solutions were not enough. The EPA needed to carry out long-term remediation on contaminated sites to ensure that they would stay clean indefinitely (Probst).

To be able to categorize the large list of sites that existed, the EPA created the Hazard Ranking System (HRS) to determine which sites needed more immediate cleanup. The HRS
was the primary system for determining placement on the National Priorities List (NPL). The NPL identifies the sites that are national priorities for receiving federal investigation and long-term cleanup (Probst, 2003).

In order to create a program that would accomplish these goals, a wide variety of resources were needed. EPA needed to construct a framework to be able to carry out the mandate of Congress. This task was difficult to accomplish for two reasons: the lack of knowledge regarding the health effects of chemicals; as well as technologies necessary to create a safe system of waste disposal (Probst, 2003). There was insufficient data collected on specific sites to know exactly what needed to be done. Much time was spent on obtaining information on waste migration to explain the history of certain sites, and to be able to train personnel on how to carry out cleanups (EPA, 2004).

Over the last 24 years, the EPA has gradually acquired the technology and skills to design an effective program to protect the environment from the dangers of hazardous waste. One recent example occurred in Utah. Located in Midvale, 130 acres of contaminated soil from old smelters was designated a Superfund site in 1991. Just recently the cleaned up site was sold to a California-based developer to build a mixed-use project containing residential houses and retail buildings. The developer, Larry Wallensten, expects the project “to become the flagship for the Superfund concept, which takes land that otherwise wouldn’t work and make it usable” (McKitrick, 2006). While the Midvale smelter site is just 1 of 14 designated sites in Utah, it is a great example of the significant environmental and economic problems the Superfund continues to solve for local communities across the country.

Crossroads for Funding

After two decades of cleanup efforts, the Superfund program finds itself addressing new problems. These problems are no longer concerns of liability or cleanup standards. The corporate taxes that helped finance the Trust Fund expired in 1995, while Congress continues to appropriate the same amount of money every year to keep the program running through general revenues (Stevens, 2004). Now, with the trust fund empty, the question is: does the cleanup program still need $1.4 billion a year, or is it time to start cutting the budget as the list of sites is completed? Will the depleted Trust Fund leave the program crippled from a lack of funding? One thing is for sure, there is no evidence from this administration or Congress suggesting that the corporate taxes will be reinstated, or that funding will increase by some other means.

The question arises whether reinstating the chemical feedstock taxes is necessary. The answer is not a simple yes or no. If Congress continues to give an adequate amount of money to the EPA to successfully implement the Superfund program, then as far as the EPA is concerned, the taxes don’t matter. But the Trust Fund revenues seemed to act as a type of insurance for the EPA. Congress never funded the program directly through Trust Fund dollars. The Trust Fund money accounted for a large portion of what was appropriated annually to run the program. But the fact that there was money in the Trust Fund meant that Congress was likely to give EPA the money it needed, or at least maintain traditional funding levels. Those taxes were collected for the sole purpose of funding the Superfund program. The fact that the Trust Fund is depleted creates an uncertainty regarding the future of the program (Dietz, 2004).

While there are many questions to be answered regarding the future of the Superfund, it is certain that there will be a need for a federal cleanup program for years to come. The idea that the nation is coming close to finishing the process of cleaning up all contaminated sites is not valid. New sites are continually being discovered and added to the NPL (Loehr, 2004). Almost 80 percent of all sites were added to the NPL in the first 10 years, between 1980 and 1990. In the 15 years since then, EPA has listed an average of 22 sites a year. Since the first round of sites was listed in 1983, 1,547 sites have been added to the NPL” (Probst, 2005, p. 20).

Many of these sites will be more expensive and technically complicated than past completed sites. This is due to the fact that cleanup with many of the more complex and costly identified sites did not commence until recently. Cleanup actions taken by industry and state Superfund Programs seldom address NPL-status sites because of their lack of funds and adequate programs. Only the federal government has the financial capability and resources to successfully clean up the most complex and costly jobs (Loehr, 2004).

Randy Dietz, (2004) the Superfund Program Liaison Manager at the EPA states that there are two distinct points of view to evaluate the value of the Superfund and to determine its future. Both positions have credible but contradicting evidence to support their opinions. One position, taken by many environmentalists and EPA personnel, embraces the idea that the Superfund is still growing and evolving to meet the needs of new sites added to the NPL every year. Supporters argue that the program is needed now more than ever because there is a large list of remaining sites that are not close to cleanup completion. The other position, commonly held by conservative congressional Republicans, believes that the EPA is currently completing and adding to the NPL half the number sites as in years past. This statistic suggests that the Superfund program has completed the majority of the work it set out to do. This position suggests that as the Trust Fund becomes depleted, the program should reevaluate its effectiveness (Dietz, 2004). Is it time to ramp down and place the focus elsewhere? Could the $1.4 billion appropriated be better spent? These opposing views raise five assumptions worth examining.
ASSUMPTIONS ABOUT SUPERFUND

THE NPL SITES HAVE ALL BEEN CLEANED UP
The first assumption often made in evaluating Superfund’s future is that there is little work left to be done at those sites already on the NPL. Data from 2006 in Table 1 shows 1,238 sites on the NPL, with 62 proposed sites.

TABLE 1. FEBRUARY 2006 SUPERFUND NPL SITE TOTALS

<table>
<thead>
<tr>
<th>NPL Site Totals by Status and Milestone</th>
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<tbody>
<tr>
<td></td>
<td>Pre-Removal (Remedial)</td>
<td>Post-Removal (Remedial)</td>
<td>Total</td>
</tr>
<tr>
<td>Proposed Sites</td>
<td>36</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>Final Site</td>
<td>1885</td>
<td>158</td>
<td>2043</td>
</tr>
<tr>
<td>Deleted Site</td>
<td>256</td>
<td>14</td>
<td>270</td>
</tr>
<tr>
<td>Partial Deletions</td>
<td>34</td>
<td>10</td>
<td>44</td>
</tr>
<tr>
<td>Construction Completions</td>
<td>933</td>
<td>47</td>
<td>980</td>
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As to new sites still being created, Scorpio Recycling in Puerto Rico is an example. In 1991, EPA found that the company was illegally discharging acids into a sinkhole area. The contamination is one-third of a mile from 21 wells that provide drinking water to approximately 75,000 people. Like Anniston, Scorpio Recycling is probably not an isolated case (Probst, 2003, p. 38).

STATE PROGRAMS WILL SUPPLANT SUPERFUND
A fourth assumption suggests that the number of sites added to the NPL should decline in the near future because of the increased number of states that have their own “mini” Superfund programs. If state programs can now take over the responsibility of cleaning up their own contaminated sites, there is no reason why they should be held on the NPL (Stavins, 2003). This assumption is not valid; the reality of the situation is more complex. It is true that the majority of states now have their own cleanup programs. Some states such as California, New Jersey, New York, have developed mature programs with adequate funding (Stavins, 2003). The number of sites that are addressed by state-operated programs is much larger than the number of sites on the NPL. But the majority of state cleanups are parallel EPA short-term removal actions. In these situations the major hazards are...
taken away but there is little or no long-term remediation. More importantly, a very small number of these programs have the financial resources to carry out cleanups the size of even an inexpensive NPL cleanup. The average cost to complete a NPL cleanup is about $22 million. Even the top funded state programs could not afford a site of this size. Any site that needs more than $1 to $2 million of public money will probably be out of the reach of state programs (Stavins, 2003). For those states that do not have well-developed programs, getting a relatively inexpensive site on the NPL may be the only option available for cleanup, let alone a site that would cost in the hundreds of millions. Except when responsible parties can be identified to pay the costs, only the federal government has the financial resources to carry out a cleanup of that size.

Stavins (2003) explains that in many cases a site is put on the NPL after a state agency’s lengthy and unsuccessful attempts to get the responsible parties at the site to do the clean up. At that point the EPA is brought in to act as an enforcer to try to get the responsible parties to pay. If that does not happen, then the site will usually be remediated by using money from the Federal Trust Fund. This is an option that will not exist if the appropriations from Congress are reduced dramatically.

OTHER FEDERAL PROGRAMS WILL ADDRESS SUPERFUND SITES—RCRA AND MEGA-SITES

In the last few years, EPA has added an average of 35 non-federal sites to the NPL a year (Stevens, 2004). This might seem small compared to the number of existing sites but in an interview, Randy Dietz (2004), an EPA Superfund Program Liaison, explained that more of the newly found sites put on the NPL are sites with massive cleanup costs. These sites are categorized as any with an expected total clean up cost of $50 million or more, known as “mega-sites”. These mega-sites pose new and complex problems. In most cases a site this size not only requires millions of dollars to remediate, but the process takes years to complete, sometimes up to two to four decades, regardless the amount of money available (Loehr, 2004). Another problem is that when Superfund began, it focused on completing all the less expensive and more basic sites. Now after 24 years, a large majority of the complex and very expensive sites are left to be slowly cleaned up. It would be financially impossible for the EPA to list more than a few of these mega sites on the NPL at a time. Fewer sites are being completed annually for these reasons.

An article published in Resources for the Future (Probst, 2004), describes two types of problematic mega-sites. The first type contains contaminated sediments and other contamination created by mining operations. The Hudson River Polychlorinated Biphenyls (PCB) site is a perfect example. PCBs are mixtures of man-made chemicals with similar chemical structures (EPA, 2004). The remediation costs associated with such a site are estimated in the hundreds of millions of dollars. Even the determination of a cleanup method for a site like the Hudson River can be highly controversial. Overseen cleanup paid for by responsible parties at a mega-site is in itself a costly endeavor. Contaminated sediment and mining sites tend to cover large areas and are enormously expensive to cleanup. At mining sites on the NPL, EPA experience indicates that responsible parties usually go bankrupt or fail to cooperate with the government. As a result of many delinquent mining businesses, mining sites are much more likely to be paid for with public funds than other sites. From 1992 through 2000, responsible parties paid for 70 % of cleanups at non-federal NPL sites. For mining sites this proportion was reversed, with EPA paying the bill for over 60 % of cleanup actions, and responsible parties paying for only 40 % (Probst, 2004).

THE CRITICS’ ARGUMENTS

Critics of the Superfund have dissimilar opinions concerning the future of the program. More than anything they differ on what is causing the debate over Superfund’s future. Grant Cope (2003), a Staff Attorney at the U.S. Public Interest Research Group (PIRG), in Washington, D.C. gives credit to the EPA for pushing the “polluter pays” program in the late 80s and early 90s, and for successfully completing remediation of 1,400 sites. However, he now criticizes the Bush administration for slowing down the pace of cleanups by 50 % and weakening the polluter pays principle. He cites statistics that annual site completion averages have dropped from 87 cleanups in the 1990s to 47 cleanups in the last few years. Cope puts the blame for the dwindling numbers on the current administration:

The Bush administration attempts to shift the blame for this slowdown by saying that the program is now cleaning up more difficult sites. This is implausible for three reasons. First, in 2000, EPA estimated that it would clean up 85 sites per year through 2002, based on timely information about the types of sites in the program. Second, the Resources for the Future report concluded that the vast majority of sites that EPA will clean up in the future would be similar to sites that the agency has years of experience remediating. Third, recent data on the dwindling amount of money in the program provides a far more plausible explanation (Cope, 2003, p. 38).

Cope explains how Congress commissioned Resources for the Future (RFF) to write a report outlining the future financial needs of the program. He accuses the administration of under-funding the program by $1-1.4 billion, compared to the estimate of needed funding given by the RFF for 2001 to 2003.

Cope strongly urges the Bush administration to replenish the Superfund Trust Fund, stating that it allows the program to clean up sites when there are no viable parties, or when polluters refuse to take responsibility. He feels that the only way to rebuild the Trust Fund is to reauthorize the Superfund taxes. The taxes expired in 1995 and he blames the Bush
administration for refusing reauthorization until the Superfund is “reformed”. He strongly disputes the administration’s rationale, as the program has undergone more than 30 targeted reforms in the previous seven years (Cope, 2003).

THE FUTURE OF SUPERFUND

A central purpose of this essay has been to demonstrate there will be a need for a federal Superfund program for many generations to come. If the program is needed, annual appropriations will be required from Congress. Large, costly, and complex sites will continue to be found. These sites will have to be cleaned up eventually, and only the federal government could possibly provide the financial resources to do so. Seven new sites were added to the NPL in September 2005, several are large sites where the EPA expects to carry the financial burden of the cleanups (EPA, 2004).

When Superfund was first enacted, most experts thought EPA would learn to clean up sites quickly and that would be the extent of the agency’s mandate. Unfortunately, this has not proven to be the case. At many sites groundwater is contaminated and other contamination remains even after the agency declares the cleanup complete. To guarantee long-term protection requires years, and even decades, of cleanup operations, and monitoring levels of contamination at the location (Loehr, 2004). Making sure these actions take place should be a federal responsibility for all NPL sites.

The program will continue to need annual appropriations from Congress. The chemical feedstock taxes should be reinstated to ensure the funding necessary to continue cleaning up contaminated sites. The current administration has made no effort to implement new policy to begin generating revenues for the depleted Trust Fund. Instead, the Federal Government is now financing the program with tax dollars, something that has never happened in the history of the Superfund. How long the program will continue in this state before Congress slowly cuts funding from the Superfund budget is unknown.

Hundreds of contaminated sites have been remediated, but there is not enough money to complete all work on the sites already designated, never mind the new ones that are still being added to the NPL. The Superfund has not been a controversial issue in the public eye for years, but that could all change if the funding shortfalls continue at some of the more high profile cleanup sites. This would take the program right back to its origins. After all, neglecting hazardous waste sites is how Superfund got started.

REFERENCES


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