



Investigation of Public Involvement in
Long-Term Stewardship Sites of the
Superfund Program

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Abstract

Active public involvement can support effective long-term stewardship programs, which protect public health and the environment during the operation of long-term remedies at Superfund sites. Although public involvement is important for the success of long-term stewardship programs, much of literature about public involvement in the cleanup process focuses more on the whole duration of cleanup process and less on the long-term stewardship phase. Therefore, our project attempted to provide more information about public involvement at long-term stewardship sites. To accomplish this, we identified several long-term stewardship sites with high public involvement and conducted interviews with EPA officials from those sites. Based on our findings from interviews, and review of site reports and five-year reviews, we provided a set of conclusions regarding the factors associated positively or negatively with the level of public involvement, as well as recommendations for EPA to increase public involvement.

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List of Acronyms

CAG	Community Advisory Group
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIC	Community Involvement Coordinator
DOE	Department of Energy
EPA	Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
GPRA	Government Performance and Results Act
HRS	Hazardous Ranking System
IC	Institutional Control
LTRA	Long Term Response Actions
LTS	Long-term Stewardship
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
RA	Remedial Action
RD	Remedial Design
RI	Remedial Investigation
ROD	Records of Decisions
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
TAG	Technical Assistance Grant
TASC	Technical Assistance Service for Communities

1.0 Introduction

Over thirteen hundred sites in the United States have been identified as hazardous because of the presence of wastes that are dangerous or potentially harmful to public health or the environment (EPAI, 2012). For example, the Resolve Inc. site in Massachusetts has groundwater, surface water, soil and sediments contaminated with volatile organic compounds (VOCs) and polychlorinated biphenyl (PCBs) (Resolve Inc., 2012). Moreover, fish from the adjacent Copicut River and Cornell Pond contain elevated levels of PCBs. At sites with hazardous contaminants, the public may be at risk by coming into contact with contaminated groundwater, surface water, soil or sediments, or by eating contaminated fish.

In the wake of the discovery of toxic waste sites such as Love Canal, NY and Times Beach, MO during the 1970s (EPAb, 2012), the government passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (EPAb, 2012), giving the Environmental Protection Agency (EPA) the responsibility to identify and clean up the nation's hazardous waste sites. To accomplish this responsibility, EPA established the Superfund Program. Since 1980, the Superfund Program has resulted in the cleanup of 359 sites.

The Superfund cleanup process involves several steps (EPAd, 2011). These steps include identifying the contaminated sites, investigating the nature and extent of contamination, adding the site to the National Priorities List (– a list of hazardous waste sites to be cleaned up), planning and implementing cleanup activities, and finally deleting the site from the National Priorities List when the level of contamination is low enough to be safe for human health and environment. During each phase of the cleanup process, EPA is required by law to involve the local community and notify them of the actions of EPA regarding the site and cleanup process.

Due to the nature of contamination, a large percentage of sites on the National Priorities List (NPL) require long-term remedial actions. For example, ongoing pump-and-treat systems are necessary for treating contaminated ground water, and in some cases they are necessary for decades or longer. Sometimes, institutional controls may also be implemented to limit the exposure to contamination. Institutional controls are administrative and legal controls that help minimize human exposure to contamination and protect the integrity of the remedy (EPAi, 2011). Long-term stewardship describes the period during which long term remedies operate. There are currently 1123 sites on the NPL which are in this phase. The long-term stewardship phase is very important for monitoring the integrity of remedies and for ensuring that institutional controls remain effective. To achieve these goals, EPA may rely on the public involvement.

The foundation of EPA's community involvement program is based on the belief that all the stakeholders of a Superfund site, especially local residents affected by the cleanup process, have the right to know what actions EPA is taking in their community and to have a say in the decision-making process (EPAC, 2012). While EPA retains responsibility and authority to make final decisions, it seriously considers community input, because making extra effort to listen to and involve people can make the cleanup process smoother and timelier (EPAC, 2012). Hale divides high public involvement into three categories based on the intended outcome: public awareness (increasing public knowledge that a problem or issue exists), public education (providing information so the public can understand government policies and actions), and public participation (the public has an opportunity to assist in decision-making or takes some action to support policy implementation) (Hale, 1993).

In the long-term stewardship phase, there are a number of ways that a local community can get involved in the Superfund process. They can work through Community Advisory Groups (CAGs) or Technical Assistance Groups (TAGs) to participate in regular site reviews or visit the site, as well as attend public meetings to give input or feedback. They can also work with a Community Involvement Coordinator (CIC) to express their concerns or give their opinion in five-year review reports.

Active public participation is very important to ensure a long-term stewardship program to be successful (Meyer, 2003). However, much of the literature on the role of the public in the cleanup process focuses more on the whole duration of the process and less on the long-term stewardship phase. The goal of our project was to investigate the role of public involvement during the long-term stewardship (LTS) phase of EPA Superfund cleanups. We reviewed a sample of sites under long-term stewardship and selected a number of sites where public interest is high, or unique approaches are being used to increase public involvement. Then, we conducted interviews with site managers and community involvement coordinators from the sites we selected. We were particularly interested in the factors that have affected public involvement during long-term stewardship and what reasons are associated with high public involvement.

We found that public involvement at sites in the Superfund program drops tremendously during the long-term stewardship phase. However, there are a few exceptions where the public involvement remains high even during long-term stewardship. The nature of the site and the environmental awareness of the community influence the level of public involvement during the long-term stewardship phase. Sites which are closer to residential areas tend to have higher public interest. In addition, if the community has high awareness about the environment, EPA gets more constructive feedback. We also found that community leadership is an important

reason for extraordinarily high public participation. Moreover, redevelopment of the site attracts public interest because local communities want to give input on how the site should be reused. Based on our findings, we developed a set of suggestions to help EPA increase the public involvement at long-term stewardship sites.

2.0 Background

The purpose of the background chapter is to provide basic information about the Superfund program and the cleanup process, the details about public involvement which is the main interest of this research project, and different forms of contamination and their effects on the environment.

2.1 Superfund Program

Superfund is a program of the federal government whose primary objective is to clean up uncontrolled hazardous waste sites in the nation. The Superfund program is operated under the supervision of the Environmental Protection Agency (EPA) and it strives to clean up remaining hazardous waste sites on the National Priorities List (NPL) to protect the environment and health of the community (EPAb, 2012).

2.1.1 Background of Superfund

During the 1970s, the Superfund program was established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 to address abandoned hazardous waste sites in the United States (EPAb, 2012). CERCLA has subsequently been amended by the Superfund Amendments and Reauthorization Act of 1986, and the Small Business Liability Relief and Brownfields Revitalization Act of 2002 (EPAj, 2012). The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) serves as the blueprint for responding to oil spills and hazardous substances releases.

The Superfund program is overseen by EPA's Office of Solid Waste and Emergency Response (OSWER). The Office of Emergency Management within OSWER is responsible for short term responses and the Office of Superfund Remediation and Technology Innovation is responsible for long term response programs. The Federal Facilities Response and Reuse Office

is involved in 70 sites with federal facilities. EPA has 10 regional offices around the nation and these offices are responsible for implementing EPA’s programs, including the Superfund. Figure 1 and Table 1 show the map of EPA regions and list of states in each region.

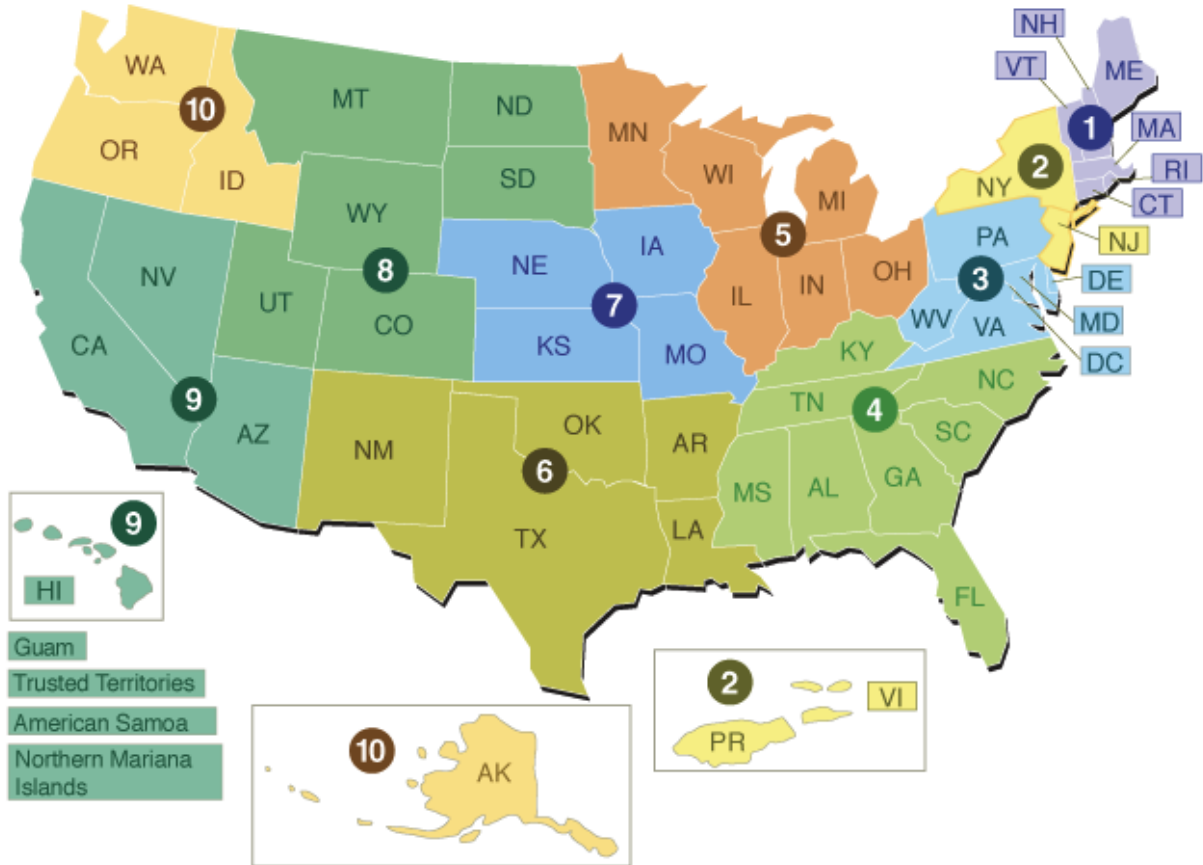


Figure 1: Map of 10 EPA regions

Region	States
Region 1	ME, NH, VT, MA, RI, CT
Region 2	NY, NJ, PR, VI
Region 3	PA, DE, DC, MD, VA, WV
Region 4	KY, TN, NC, SC, MS, AL, GA, FL
Region 5	MN, WI, IL, MI, IN, OH
Region 6	NM, TX, OK, AR, LA
Region 7	NE, KS, IA, MO
Region 8	MT, ND, WY, SD, UT, CO
Region 9	CA, NV, AZ, HI
Region 10	WA, OR, ID, AK

Table 1: List of States in each EPA region

2.1.2 Cleanup Process

The Superfund cleanup process involves several steps which are summarized in Table 2 (EPAd, 2011). The first step is the Preliminary Assessment (PA), which distinguishes, based on available information about a site and its surrounding area, between sites that pose little or no threat to human health and the environment, and sites that may pose a threat and require further investigation. If the site requires immediate or short-term response actions, the Office of Emergency Management within OSWER is responsible for these responses. If the PA recommends further investigation, a Site Inspection (SI) is performed. SI investigators provide the data needed for the Hazardous Ranking System (HRS) score and documentation by collecting environmental and waste samples.

The next step is the National Priorities List (NPL) Site Listing Process. Sites with an HRS score of 28.50 or greater are eligible to be included in the National Priorities List (NPL) (EPAn, 2011). Sites on NPL require long-term cleanup actions monitored by the Office of Superfund Remediation and Technology Innovation and the Federal Facilities Response and Reuse Office, both of which are within OSWER.

After a site is listed on NPL, the next step is a Remedial Investigation/Feasibility Study. The main purposes of a Remedial Investigation (RI) are to characterize site conditions, to determine the nature of the waste, and to assess risk to human health and the environment (EPAp, 2011). Then, a Feasibility Study (FS) is conducted to find alternative remedial actions for treatment of the contamination, and to evaluate the potential performance and cost of those actions. The RI and FS are conducted concurrently; data collected in the RI affects remedial alternatives developed in the FS, which in turn affect the data needed. Therefore, conducting

these two phases concurrently minimizes the collection of unnecessary data and maximizes data quality.

When the type of remedial action to be used at a site is determined, it is documented in a Record of Decision (ROD). The main purpose of ROD is to formally record which cleanup alternatives will be used to clean up a Superfund site (EPAo, 2011). A ROD contains information about history, description, and characteristics of the site, as well as contaminated media, the contaminants present, scope and role of response action, and the remedy selected for cleanup.

Following the ROD is the Remedial Design/Remedial Action phase. During the Remedial Design (RD) phase, technical specifications for applying the selected cleanup remedies are designed. The Remedial Action (RA) phase immediately follows the RD phase, and involves construction or implementation phase of cleanup. The majority of cleanup activities occur during the RA phase.

The next phase is Construction Completion, which marks the completion of necessary physical constructions for required remedies. However, the completion of physical constructions does not reflect the end of cleanup process. Some types of contamination – groundwater contamination, for example – require long-term remedies that are ongoing even after Construction Completion. Such long-term remedies – pump and treat remediation for groundwater cleanups, for example – generally take decades to complete (Nguyen, 2011). The duration in which such long-term remedies operate is called the Long-term Stewardship phase.

When EPA determines that no further protection is required at a site for human health and the environment, that site may be deleted from NPL. This is the last step in the cleanup

process, and deletion of a site from NPL implies that the site is safe to be reused. As of March 02, 2012, 359 sites had been deleted from NPL (EPAI, 2012).

Step	Name of the step	Acronym
1	Preliminary Assessment / Site Inspection	PA/SI
2	National Priorities List (NPL) Site Listing Process	NPL Listing
3	Remedial Investigation / Feasibility Study	RI/FS
4	Records of Decision	ROD
5	Remedial Design / Remedial Action	RD/RA
6	Construction Completion	CC
7	Post Construction Completion	PCC
8	National Priorities List Deletion	NPL Delete
9	Site Reuse / Redevelopment	Reuse

Table 2: Steps of Superfund cleanup process

2.1.3 Long Term Stewardship

The term long-term stewardship as defined in *A Report to Congress on Long-Term Stewardship* (U.S. Department of Energy [DOE], 2001) “refers to all activities necessary to ensure protection of human health and the environment following completion of remediation, disposal, or stabilization of a site or a portion of a site” (DOE, 2012). Up until the late 1990s, the Superfund program was focused on the steps prior to the Construction Completion phase in the cleanup process. Achieving site Construction Completion has been the Superfund program’s primary measure of accomplishment and it is also the target of the Government Performance and Results Act (GPRA). However, this phase does not represent the end of cleanup actions. As mentioned in the last section, additional activities are required to achieve remedial objectives after physical constructions have been completed and these activities are operated during the Long-term Stewardship phase.¹

For example, sites with groundwater contamination require ongoing remediation over many years and many long-term stewardship sites have remedies that only allow certain uses of

¹ In the context of EPA, Long-term Stewardship phase is called Post Construction Completion phase.

the site because of the remaining residual contaminants. During long-term stewardship, the remaining contamination at the sites is not safe for human exposure so institutional controls are implemented to prevent or limit exposure to residual contaminants and waste. The Industrial Waste Processing site in California, for example, has groundwater and soil contaminated with lead, asbestos, acetone and other solvents (EPA, 2011). The remedial actions at this site started in 1996 and are still ongoing. EPA issued restrictions on site access to minimize public exposure to contaminants.

The activities at long-term stewardship sites include Long Term Response Actions (LTRA), Operation and Maintenance (O&M), Institutional Controls, Five-year Reviews, Remedy Optimization, NPL Deletion, and Site Reuse. The most common LTRA remedies are ground water pump and treatment, and monitored natural attenuation (MNA) remedies with objectives of aquifer restoration (EPA, 2011).

The function of O&M is to ensure that remedy performs as intended. Actions of O&M range from maintaining engineering containment structures to operating ground water remediation systems.

Institutional controls are administrative and legal controls that are implemented to minimize human exposure to contamination by limiting land or resource use, and to protect the integrity of the remedy. ICs are used when the contamination is first discovered, when remedial actions are ongoing, and when remaining residual contamination at a site is at a level which is not safe for unrestricted use and unlimited exposure after cleanup.

Five-year reviews are required by CERCLA to evaluate the implementation and performance of remedies for sites where the remaining hazardous substances are not safe for unrestricted use and unlimited exposure. In addition to five-year reviews, EPA also conducts

remedy optimization reviews to improve remedy performance and cost effectiveness without compromising protectiveness. EPA works with communities and local officials for redevelopment of hazardous sites after cleanup, and the sites are finally deleted from NPL when all response actions are complete and all cleanup goals are achieved.

In order to ensure that the above actions are performed successfully, long-term stewardship sites have two major requirements. The first requirement is that “the information must be available” and properly communicated to the public. This is necessary, but not sufficient for successful long-term stewardship. The second requirement is “impossible without the first, and that is an informed citizenry must actively utilize the data to intervene in decision making. This second condition is both necessary, and probably sufficient” to sustain a successful long-term stewardship program (Meyer, 2003). This statement implies that public involvement is very important for the success of a long-term stewardship program.

2.2 Public Involvement

According to EPA, the mission of their Community Involvement program is to advocate and strengthen early and meaningful public participation (EPAC, 2012). The term “public” refers to not only the local residents of Superfund sites but also the stakeholders affected by the decisions and actions of EPA regarding the cleanup process. These stakeholders include local, regional and state officials, responsible parties for contamination, and people affected by contamination, remedies and site redevelopment. Public involvement, as defined by the EPA Superfund program, is the process of engaging in dialogue and collaboration with community members. EPA usually utilizes local media, public meetings, public notices and interviews to communicate with the public. For example, 3 out of 4 sites in the Montana interview local residents regarding the five-year review process and all sites in this state post fact sheets in

public places – such as a public library – to inform the public about the actions going on at the site.

2.2.1 Importance of public involvement

Public Involvement is both a fundamental and mandatory component of the Superfund program. When Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), public involvement was incorporated into the Superfund process. This act required EPA to involve the public in decision making regarding cleanup actions at Superfund sites. Since then, the role of the public has been further strengthened by Congress through the passage of the Superfund Amendments and the Reauthorization Act of 1986 (SARA), and by EPA through policy and regulation. The policy to incorporate citizen concerns into Superfund decision-making, for instance, was issued by EPA on Jan 2, 1991 (EPAh, 1991). In addition, EPA has learned that listening to community members and involving them in the process results in a smoother and timelier cleanup (EPAc, 2012). Therefore, EPA makes an extra effort to strengthen the public involvement and seriously considers community input while maintaining the authority and responsibility to make final decisions.

It should be noted that there are various steps and degrees of public communication and participation. In an article by Arnstein, it is described as a ladder, with each rung of the ladder representing a different level of public involvement. She says that communication comes in two forms: informing and consultation. Informing the public of their rights, responsibilities, and options is the most important first step toward more effective citizen participation, and is often the first step of EPA's community involvement team. However, too frequently the emphasis seems to be placed on a one-way flow of information from the agency to the public, with little to no public feedback. Consultation invites the public's opinions and input, and this level of

communication between the agency and stakeholders is vital to the remedial process (Arnstein 1969).

2.2.2 Public involvement in cleanup process

Table 3 summarizes how the public can get involved in the Superfund cleanup process during different phases (EPAg, 2011).

Phase	How the public can get involved
Preliminary Assessment and Site Investigation	<ul style="list-style-type: none"> • Provide EPA with information about the site
NPL Listing Process	<ul style="list-style-type: none"> • Submit comments on EPA's proposal to include the site in NPL
Remedial Investigation and Feasibility Study	<ul style="list-style-type: none"> • Contact CIC or Remedial Project Manager regarding any concern • Consider whether to use available resources for public involvement • Participate in public meetings or other EPA events
Record of Decision	<ul style="list-style-type: none"> • Inform EPA about how the community wants to reuse the site in the future
Remedial Design/Remedial Action	<ul style="list-style-type: none"> • Attend periodic events about progress at the site
Post Construction Completion	<ul style="list-style-type: none"> • Participate in regular site reviews • Visit the site or arrange a site tour through EPA
Deletion from NPL	<ul style="list-style-type: none"> • Give feedback on EPA's proposal to delete the site from NPL
Reuse	<ul style="list-style-type: none"> • Work with EPA to plan the redevelopment of the site

Table 3: Public Involvement during different phases of cleanup

2.2.3 Public involvement in LTS sites

EPA believes that long-term stewardship activities will be more successful if the public is well informed about them and actively involved in maintenance activities (EPAc, 2012). The EPA's primary method of informing the public in site activities is the distribution of fact sheets – notices with information about the site – to the public. However, while it is common for the

public to receive information on site activities, it is less common for the public to respond to this information and give feedback or suggestions to the EPA. Other more comprehensive ways of involving the public, such as community advisory boards, are often an effective method of public involvement, but their use across the country is very low.

Although EPA should take major responsibility for long-term stewardship sites, states, localities and the general public must be actively involved to sustain institutional controls during long-term stewardship. For any given site, contaminant reduction, contaminant isolation, and stewardship should be treated as an integrated and complementary system: one that requires foresight, transparently clear and realistic thinking, and accountability (Probst & McGovern, 1998). The involvement of stakeholders increases the public trust in a stewardship program and ensures accountability. History shows that the involvement of these other entities in risk management decisions ensures a more effective and durable outcome. Many decisions can be better informed and their information base can be more credible if the interested and affected parties are appropriately and effectively involved (Chess & Purcell, 1999). However, despite this known importance of public participation in the decision-making process, very little is known about the effects or levels of public involvement at LTS sites.

2.2.4 EPA Resources for public involvement

EPA has several resources to promote public involvement such as Technical Assistance Grants (TAG) and Technical Assistance Services for Communities (TASC) (EPAa, 2012).

Technical Assistance Grants provide money for activities that help the general public participate in decision making at eligible Superfund sites. Congress created EPA's TAG program through SARA in 1986. An initial grant up to \$50,000 is available to qualified community groups and more than \$20 million has been awarded since the first award in 1988 (EPAm, 2012).

The main advantage of a TAG is that it enables the public to hire independent technical advisors who can help them better understand the technical aspects of cleanup actions and give suggestions regarding alternatives for remedial actions. For example, the site manager of Eastland Woolen Mill site in ME mentioned that the technical advisor hired with funds from TAG had given unbiased perspectives on EPA's actions regarding the cleanup process.

TASC is a program that provides educational and technical assistance to communities. It helps communities better understand and become involved in the cleanup process of hazardous waste sites. While TAG provides grants, TASC offers programs to educate the public directly.

2.3 Summary

Uncontrolled hazardous waste sites in the United States are cleaned up by the Superfund program of the Environmental Protection Agency. EPA strives to clean up hazardous sites effectively and efficiently through different phases, and considers community input in each phase. EPA has observed that making an extra effort to listen to the community is invaluable because it leads to a smoother and timelier cleanup. Therefore, EPA usually attempts to incorporate public involvement in each phase of the cleanup process. In most cases, residual contamination remaining onsite after construction completion phase is at a level which is not safe for unrestricted use and unlimited exposure. Such sites are put under long-term stewardship and institutional controls are implemented to limit human exposure to contamination and to ensure the effectiveness of remedial actions. Public involvement during this long-term stewardship phase is crucial to support institutional controls and redevelopment of the site.

Although public involvement during long-term stewardship is important for enforcing institutional controls and redeveloping the site, we found that only limited information is available regarding public involvement at long-term stewardship sites. Therefore, our project

focused on assessing public involvement during long-term stewardship phase in contrast to public involvement during the whole cleanup process. Reflecting this area of interest, the goal of our project was to investigate the role of public involvement during the long-term stewardship (LTS) phase of EPA Superfund cleanups.

3.0 Methodology

In order to achieve our project goal of investigating the role of public involvement during the long-term stewardship phase of EPA Superfund cleanups, we accomplished 5 objectives.

1. To develop a list of all sites on the National Priorities List which are currently under long-term stewardship.
2. To review each site and identify the sites where unusual approaches are being used to increase public involvement during long term stewardship.
3. To assess the benefits of Community Advisory Groups and Technical Assistance Grants on long-term stewardship sites.
4. To assess how unusual approaches affect the level of public involvement.
5. To analyze the data to draw a set of findings regarding public involvement in long-term stewardship sites.

3.1 Developing a list of long-term stewardship sites on NPL

Our first objective was to begin limiting our search for information regarding our project by developing a list of all the sites on the National Priorities List that are currently under long-term stewardship. To accomplish this objective, we utilized EPA's website for information about the sites on NPL. From the [NPL Site Status Information](http://www.epa.gov/superfund/sites/npl/status.htm)² web page found on National Priorities List web page in Superfund program, we got access to all sites on NPL categorized by status of the site – Proposed, Final, Construction Completion Milestone, Partially deleted and Deleted.

Since our interest is associated with long-term stewardship sites, we selected the sites with a Construction Completion Milestone. These are the sites where necessary physical

² <http://www.epa.gov/superfund/sites/npl/status.htm>

completions have been completed but they have not been deleted from NPL because of ongoing long-term remedies. Therefore, the list of such sites represents the list of long-term stewardship sites on NPL, although EPA uses a different term “Post Construction Completion”. We identified 1123 long-term stewardship sites in total.

3.2 Identification of sites with unusual approaches for public involvement

The next step after developing a list of long-term stewardship sites on NPL was to review a sample of the 1123 sites to identify sites with unusual approaches for public involvement. In order to accomplish this step, we needed a systematic method to distinguish usual and unusual approaches regarding public involvement. Therefore, investigated site reports and five-year reviews from a small sample of sites – between 20 and 30 sites –to search for common approaches used for public involvement. From this preliminary review, we determined that usual approaches refer to regular public meetings, public notice, fact sheets, local media and interviews. Any approach not included in this list would be term “unusual” approach, in the context of this project. A fishing derby at the Resolve Inc. site in Massachusetts is a great example of unusual approach for public involvement and other examples include site tours and meetings with local officials and stakeholders.

With the method to distinguish usual and unusual approaches for public involvement clearly defined, we moved on to investigating a larger sample of sites. As we did for our preliminary review, we used site reports and five-year reviews to assess the information about public involvement. To create our sample, we looked at every other site on the list in order to maximize the number of states which the reviewed sites belong to, and to minimize the potential bias resulting from not reviewing sites from some states. Once, this step had been completed, we reviewed additional sites. Ultimately, we reviewed 821 sites of the total 1123 sites (72.31%).

3.3 Assessing the benefits of Community Advisory Groups and Technical Assistance Grants on long-term stewardship sites

To accomplish our third objective, we needed a list of sites with Community Advisory Groups (CAGs) and Technical Assistance Grants (TAGs). Using two web pages “Where are CAGs?”³ and “Where are TAGs?”⁴ from the EPA website, we developed a list of all sites which have CAGs and/or TAGs. Then, we compared this list with the list of all long-term stewardship sites to identify the long-term stewardship sites with CAGs and/or TAGs. A total of 7 long-term stewardship sites were identified in this process.

Once we had a definite list of long-term stewardship sites with CAGs and/or TAGs, we contacted site managers and community involvement coordinators for the sites in order to begin setting up interviews. In these interviews, the questions asked revolved mainly around finding out what had motivated EPA and the public to set up CAGs and/or TAGs, benefits of CAGs and TAGs, and what methods were most effective, in the opinions of interviewees, for communicating with and involving the public.

3.4 Assessing how unusual approaches affect the level of public involvement

The method we used for accomplishing this fourth objective is very similar to the one we used for our third objective. Upon completing the steps for first and second objective, we got a list of long-term stewardship sites where approaches for public involvement we considered unusual using our definition. In order to assess the impact of such approaches on promoting public involvement, we contacted site managers and community involvement coordinators for the sites, and requested interviews. The questions asked during these interviews are also very

³ <http://www.epa.gov/superfund/community/cag/whereare.htm>

⁴ <http://www.epa.gov/superfund/community/tag/whereare.htm>

similar to the questions mentioned in the previous section; however, instead of asking questions about CAGs or TAGs, we included new questions regarding how EPA got the idea for such unusual approaches, and what extra resources, compared to usual approaches, are required to implement these unusual approaches.

3.5 Data Analysis

The data we obtained from interviews with EPA officials and investigation of site reports and five-year reviews are qualitative rather than quantitative. Therefore, we used an interpretative approach to analyze these data qualitatively and translate the obtained data into findings. An interpretative approach allows researchers to treat social action and human activity as text (Berg, 2007). Researchers following this approach transcribe interviews and observational data into written text before analyzing the data.

For our analysis, we first excluded the data unrelated to the interest of this project – for example, some interviewees mentioned other sites with high public involvement but those are not long-term stewardship sites. Then, we organized the data into four groups:

1. Data regarding the level of public involvement
2. Data regarding the impact of unusual approaches
3. Data regarding EPA resources for public involvement, and
4. Data regarding reasons for high public involvement. For the data in fourth group, we regarded “high” public involvement when the public actively gave feedbacks, participated in decision-making process and/or enforcement of institutional controls.

Within each group of data, we looked for the facts supported by several interviews, site reports and five-year reviews to develop a set of findings. We then used these findings and literature reviews to draw a set of conclusions and recommendations for EPA.

4.0 Findings

As mentioned in the previous chapter, interpretative approaches were used to qualitatively analyze the interviews. This chapter summarizes the findings derived from our interviews, as well as our assessment of site reports and five-year reviews, and then explains each finding in detail. These findings are categorized into:

- 1) Level of public involvement during long-term stewardship phase
- 2) Impact of unusual approaches on public involvement
- 3) Benefits of EPA resources for public involvement
- 4) Reasons behind high public involvement

The following is a list of sites we interviewed where methods of public involvement are considered to be unusual, along with brief descriptions of their approaches.

- Resolve Inc., MA: this site organizes an annual fishing derby where interested individuals can compete for trophies and cash awards. The fishing derby helps EPA collect fish samples more efficiently by taking advantage of the fishing expertise of local residents while promoting public interest and public knowledge about institutional controls associated with the consumption of fish from the nearby area.
- Montana Pole and Treating, MT: facts sheets are delivered door to door (instead of being posted at a public place, which happens at other sites) and site tours are arranged to inform the public about the progress of remedial actions.
- Eastland Woolen Mill, ME: there is a website for site information, www.cattailpress.com, which was created by the public and acts as a forum for public feedback. Instead of calling the EPA office to give feedback or mailing feedback to the office, individuals can more

easily and conveniently communicate through this website. The website also allows the public to customize how the site information is presented.

- Ringwood Mines/Landfill, NJ: the Community Involvement Coordinator (CIC) has to put extra effort at this site to keep continuous contact with public because the public has lost trust with EPA since considerable contamination was found at this site after its deletion from NPL. EPA receives frequent calls from public and CIC sends liaisons to contact and work closely with community representatives.

In addition to this list, we also interviewed the sites which have a CAG and/or a TAG.

4.1 Level of public involvement during long-term stewardship phase

Finding 1

Public involvement at the majority of Superfund sites drops tremendously after Record of Decisions or the Construction Completion phase.

Site managers and community involvement coordinators whom we interviewed mentioned that they tend to get more input from public regarding the choice of remedies during the Remedial Investigation and Feasibility Study phases and then public involvement drops significantly after Record of Decisions. Moreover, our assessment of five-year reviews show that public interest decreases as long-term stewardship goes on. For example, fifth five-year reviews reported less public involvement than first five-year reviews.

Although the reason for decreased public involvement is not certain, it is found by site managers we interviewed that public involvement, in most cases, drops after decisions for remedies have been made or after necessary physical constructions for remedies have been completed. However, there are a few exceptions where the public involvement remains high

during long-term stewardship phase. Findings regarding these exceptions will be discussed later in this chapter.

Finding 2

The level of public involvement during long-term stewardship phase depends on the characteristics of the site.

The characteristics of the site refers to types of contaminants present, impact of contamination on the surrounding area, proximity to the local community, and potential for redevelopment. Our interviews and our review of site reports support this finding.

- We found that sites which are far from residential areas have less public involvement. For example, the Folkertsma Refuse site in Michigan is a landfill which is far from residential areas, and the site manager believes that the location of landfill and the type of contaminants present (landfilled waste consisting of foundry sand, chemical products, construction debris, industrial waste, etc.) are the reasons why public interest is low at this site.
- Increased public involvement is associated with the potential of sites to be redeveloped. We found several sites (Milltown Reservoir Sediments in Montana, Idaho Pole in Montana, and Eastland Woolen Mill in Maine) where public involvement is high and the sites are being redeveloped. Site managers for these sites believe that redevelopment is one of the reasons for high public involvement.
- Community interest tends to be higher when the contamination directly affects their daily lives. For example, a couple of sites in Massachusetts (Resolve Inc. and New Bedford Harbor) have fish contaminated with PCBs (polychlorinated biphenyls) and the contaminants are going into the food chain. The site manager said the public at these sites is very concerned about contamination and participates more in meetings to give input regarding

remedial actions. According to the experience of the CIC, such level of public involvement is higher compared to other sites she has worked.

Finding 3

The main purposes of public involvement during long-term stewardship are enforcing institutional controls and gathering public feedback.

Although the two purposes mentioned above appear to be the most common purposes of public involvement during long-term stewardship, we found that some sites focus more on the former and others on the latter. For example, the fishing derby at Resolve Inc. in Massachusetts focuses more on enforcing institutional control and collecting fish samples, and less on gathering public feedback, whereas public involvement methods at Montana Pole and Treating in Montana and Eastland Woolen Mill in Maine focus more on gathering public feedback. While purposes for public involvement during long-term stewardship are not the same for every site, our analysis of site reports and five-year reviews suggest that most sites focus more on gathering public feedback than on enforcing institutional controls.

Finding 4

Effective methods of communication with public vary from site to site.

Several methods of communication with the public are used, according to our review of site details and five-year reviews of long-term stewardship sites. These methods include, but are not limited to, public meetings, notification sheets, interviews, and local media. As the goal of our project was to help EPA increase public involvement at long-term stewardship sites, we attempted to identify effective methods of communication with the public. During our interviews, we asked the opinions of interviewees about the most effective method of communication for long-term stewardship sites, according to their experience. Every interviewee

mentioned that “it varies for each community”. For example, some communities prefer regular public meetings to express their opinions while some prefer interviews. Even within the same community, different people have different preferences. One site manager said “some people do well with public meetings, others wait and want to speak after the meeting, others want to work through their Town officials, and others want private conversations.”

Finding 5

Public interest is an important driving force for EPA’s actions regarding public involvement.

All of our interviewees suggested that the level of public interest limits EPA’s actions regarding public involvement. One site manager said he would not recommend a CAG at his site because it “requires interest from community to work” and the level of public interest at his site was not sufficient. This suggests that EPA cannot take aggressive actions unless there is a certain level of public interest. In another case, the community involvement coordinator stated that he “went out to interview people but did not get much input because the community was not interested in the site.” On the other hand, if the community actively participates, it is much easier for EPA to get useful input for the decision-making process and encourage the community to utilize available resources such as a CAG or TAG. Eastland Woolen Mill in Maine and Milltown Reservoir Sediments in Montana are strong examples of how public interest led to forming both a CAG and TAG. However, “without active public participation, EPA’s actions of community involvement are limited to the level required by law,” as mentioned by a couple of site managers. Site managers and community involvement coordinators we interviewed believe that it is unnecessary to go beyond this law unless there is high public interest.

4.2 Impact of unusual approaches on public involvement

Finding 6

Leveraging local knowledge and expertise can support monitoring of remedy performance and enforcement of institutional controls.

This finding is based on the experience at the Resolve Inc. site in Massachusetts. At this site, EPA has to collect fish samples to check the level of PCBs (polychlorinated biphenyls) in order to monitor remedies. Moreover, fish from the nearby pond and river contain elevated levels of PCB so institutional controls were implemented to limit fish consumption. According to the site manager we interviewed, the fishing expertise of the local community acts as a great resource for EPA in collecting fish samples to monitor the level of PCB in fish stocks. EPA gets a large percentage of fish species required for samples within a small amount of time by taking advantage of the fishing expertise of community members. In addition, this event serves as a great tool for reminding the public about policies and restrictions for fishing in that pond and consumption of fish in that area, thereby enforcing institutional controls. These benefits observed by the site manager and community involvement coordinator suggest that organizing the fishing derby is a great approach for enhancing public involvement at Resolve Inc.

Therefore, we inquired the resource and other requirements for this event in order to consider the feasibility of a fishing derby at similar sites. Two major requirements identified are public interest and skills in fishing, and a safe environment for fishing. In addition, people should have knowledge, expertise and skills that can support monitoring of remedies and enforcement of institutional controls. As long as these requirements are met, it may be possible to invest extra resources, such as time and money, to organize a fishing derby – or other similar approaches which utilize local expertise – at other Superfund sites.

Finding 7

Networking with nearby universities can increase the disclosure of site information to public.

Professors from a university nearby the Montana Pole and Treating in Montana bring civil and environmental engineering students to the site to use data from the site for teaching purposes. This is mutually beneficial for both parties because students get practical learning experience while the site benefits from contact with networks of students and professors. When the professors mention the site in their papers or the students in their projects, the site becomes more well-known to the public. The leadership skills of students and professors also help to increase public awareness about the environment and contamination at the site. This approach has a wide scope of feasibility because it is possible for many sites to implement this method.

4.3 Impact of Resources

Finding 8

Community Advisory Groups and Technical Assistance Grants serve as useful resources for the public.

As mentioned in finding 5, high public interest is the main reason for EPA to encourage the public to apply for CAGs and TAGs. They appear to be useful resources that are mutually beneficial for both the local community and EPA. As mentioned by our interviewees, a CAG makes the community more organized so they can give better suggestions regarding remedies or redevelopment. A TAG helps the community understand more about remedial actions. This helps EPA get more input or feedback from the public.

For example, the site manager for Ringwood Mines/Landfills mentioned that the community at his site has applied for TAG, although there is already a CAG at the site, because

“The main problem with CAG is misunderstanding technical documents. The root cause of this problem is the lack of transparency in technical language.” He believes that having a TAG would be helpful in this situation and the answers of other interviewees from sites with TAG also support his belief. In the sites with TAG, “independent technical advisors have given unbiased perspectives on EPA’s actions and helped the community understand more about the cleanup process,” as mentioned by site managers.

Finding 9

Time is the most important and limited resource in communicating with public.

Site managers and community involvement coordinators whom we interviewed agree that time is the main resource they have to invest for public involvement. They have to spend a substantial amount of time to be available to the public; however, they still feel that they have been doing more work behind the scenes and are not spending enough time to communicate with the public. One CIC said “it is harder to sell ideas to the community when I am not in the community.” Several site Managers and CICs believe that it would be easier for them to involve the community if they could spend more time with the community by doing activities together, and let the members know what they have been doing regarding the site.

4.4 Reasons behind high public involvement

Finding 10

High public involvement during long-term stewardship is often associated with redevelopment of the site.

EPA places a high priority on land revitalization as an integral part of its Superfund cleanup mission. We found that a high level of public involvement is usually

associated with redevelopment of the site. According to our assessment of five-year reviews, it appears that EPA attempts to seek more input from the public when the site is considered for redevelopment. In addition, “the redevelopment aspect of the site makes the public more willing to give input on how they want the site to be reused,” as mentioned by a few of our interviewees.

For example, at the Idaho Pole site in Montana, EPA went beyond the required actions to involve the community by interviewing a number of people near the site even when the community interest was low. At Eastland Woolen Mill in Maine, the former mill occupied the entire downtown area and the community viewed the cleanup as an opportunity to both protect their health and renovate their downtown area.

Finding 11

The characteristics of the community, such as background knowledge about contamination, high environmental awareness, and leadership among community members, are valuable for improving public involvement.

For example, at the Eastland Woolen Mill site, the community created their own website, www.cattailpress.com, for site information. This website enabled the public to customize how the information was presented and also acted as a forum for public feedback. This led to easier public access to site information and an increase in public feedback, according to the site manager. There is one community member who created and managed this website, and the site manager believed that his contribution was substantial for the success of the public involvement program at this site.

At another site in Montana, Milltown Reservoir Sediments, the community has taken initiatives in working with the State government to redevelop the site into Montana State Park. The community at this site has high awareness about the environment and they have utilized both

CAG and TAG resources to actively participate in the cleanup process. Similar to Eastland Woolen Mill, the site manager credited the success of public involvement program at this site to a few individuals who demonstrated strong leadership and led other community members.

4.5 Summary

Using the data from our interviews with EPA officials, as well as our review of site reports and five-year reviews, we came up with a set of findings for four categories: level of public involvement during long-term stewardship phase, impact of unusual approaches on public involvement, benefits of EPA resources for public involvement, and reasons behind high public involvement. In the next chapter, we used these findings and literature reviews to draw a set of conclusions and recommendations for EPA.

5.0 Discussion

To accomplish our goal of investigating the role of public involvement during the long-term stewardship (LTS) phase of EPA Superfund cleanups, we identified several sites with unusual approaches for public involvement and conducted interviews with EPA officials from those sites. This chapter discusses our conclusions based on our findings from interviews, site reports, five-year reviews and literature reviews, as well as suggests recommendations on what actions EPA should take to increase public involvement.

5.1 Limitations of the project

There are several limitations to this study. First, due to time constraints, we were unable to review all sites on NPL to identify sites with high public involvement. In fact, we only reviewed 821 out of 1123 sites, which is a little more than 72%. The list of all sites we reviewed is attached in Appendix A. However, we tried to minimize the bias in our data by first reviewing every other site in each state, thus making sure that all states were reviewed, and then moved on to reviewing remaining sites, starting from the states with fewer sites in order to reduce the statistical bias presented by small sample sizes. However, it is possible that we might have missed a few sites that would be of interest to this project. In addition, the time and resource constraint limited the number of sites we could contact for interviews and the scope of our interviews, which only included EPA officials and not the public.

Second, since we did not get opinions from public, the results of our interviews might be biased towards the opinions of EPA officials, if EPA officials and the general public have different opinions.

Third, our available resource for data collection regarding public involvement at Superfund sites was also limited to EPA websites for site details and five-year reviews. We also encountered difficulties with accessing site details and five-year reviews because some EPA websites are down and some do not have five-year reviews uploaded. This may have created a small bias in our data because some states have very few Superfund sites and all websites for those sites are down so we had no data for such states.

Fourth, in terms of project scope, this project focused on identifying sites with high public involvement and finding out the reasons for such public involvement. We did not interview any site with low public involvement so we were unable to contrast the sites with high public involvement to the sites with low public involvement. Therefore, we could not claim with complete confidence that some of our findings were solely related to high public involvement and were not present at the sites with low public involvement.

5.2 Conclusions

Conclusion 1

Effective and appropriate method of communicating with the public varies with the nature of people in a community.

Analysis on five-year reviews shows that the most common methods of communication that EPA uses include public meetings, public notice, local media and fact sheets. While we were analyzing five-year reviews, we noticed that each method had different results in different sites. For example, some sites which used public notice sheets to ask for feedback from community received several letters and comments while other sites which used the same approach received little or no feedback. This suggests that effectiveness of each communication method may vary from site to site. During our interviews with EPA officials, we asked their opinions on what

methods seem to be the most effective ones, according to their experience. The uniform answer we got is that it depends on the local community. Studies also show that agencies can contribute to meeting success by holding meetings in combination with other forms of participation (Chess & Purcell, 1999). This suggests that public meetings alone are not enough, though the study also suggested that the mechanism of participation may be less important than the implementation. Therefore, we concluded that there is no single method which is the most effective; instead, it depends on the nature of the people in a community. This conclusion is primarily supported by Findings 4.

Conclusion 2

Site characteristics and community leadership affects public involvement during long-term stewardship.

The majority of sites with high public involvement are the sites being redeveloped, as stated in the findings chapter. This statement is supported by both five-year reviews and interviews with EPA officials. On the other hand, the majority of sites with low public involvement are found to be far away from residential areas. Therefore, our conclusion is that public involvement varies depending on specific characteristics of the site.

In addition, we found that the level of public involvement also depends on the community leadership. Five-year reviews for some sites reported limited community involvement although EPA initiated aggressive methods, such as interviews, which were beyond the level required by law. On the contrary, interviews with EPA officials show that the presence of active community members with strong leadership skills can significantly boost the level of community involvement, requiring less effort from EPA. This is not a surprise as community

leadership is different from organizational leadership, and people prefer the leader they choose to the leader who is appointed by authority (Hughes, Ginnett, & Curphy, 2011).

In the context of Superfund, the CIC would be the appointed leader and individual community members who are taking initiatives would be considered as community leaders. We believe that this organizational versus community leadership explains why public involvement is higher at the sites where a few active individual members are taking initiatives to motivate the public. This led us to the conclusion that the level of community involvement during long-term stewardship depends on two major factors: site characteristics and community leadership.

Conclusion 3

Resources from EPA for community involvement, CAG and TAG, are great tools for sustaining the level of community involvement during long-term stewardship.

With the exception of Resolve Inc. where a fishing derby is used to promote community involvement, all the sites we identified that have high community involvement have either a CAG or a TAG or both. This suggested that CAGs and TAGs have positive effects on community involvement so we asked EPA officials about the impacts of CAGs and TAGs at their sites. According to their answers and site reports, we concluded that these resources actually help EPA make better communication with the public, which in turn increases public involvement. CAGs are beneficial at sites involving long-term cleanups (EPAf, 2011). We found from site reports and five-year reviews that sites with a CAG have more contact with public through forums while those without a CAG usually contact public for five-year reviews only. In addition, CAGs have been hailed as the key success for remedial action plans (Knaap, Matier, & Olshansky, 2010).

Moreover, TAGs also improve the communication between EPA and general public by helping community members understand the technical aspects better, as we found from our interviews. Based on the achievements of CAG/TAG and our collected data, it is clear that these resources keep the level of community involvement high during long-term stewardship.

5.3 Recommendations

Recommendation 1

EPA should consider the use of shared TAGs in sites with similar characteristics in order to minimize the total cost of grants and maximize the number of sites with TAGs.

EPA data (EPAm, 2012) and our research show that TAGs are a useful tool to promote public involvement. However, EPA has a limited budget for granting technical assistance and as the result, the initial grant is limited to no more than \$50,000 (EPAm, 2012). There are currently 75 TAGs around the nation (EPAe, 2012) , and it is obvious that an increase in the number of TAGs would be beneficial for both EPA and communities.

As mentioned in finding 8, the public at Ringwood Mines/Landfill has applied for a TAG, although the site is already in the long-term stewardship phase, because they have issues with understanding technical terms regarding the cleanup process. Moreover, our conclusion 3 states that a TAG is useful during the long-term stewardship phase. Therefore, we would suggest EPA attempt to increase the number of TAGs.

To increase the number of TAGs within the budget constraint, EPA should investigate the possibility of sharing TAGs for sites with similar characteristics. For example, we have found at least two sites in Massachusetts where fish stocks are contaminated with PCBs. Using two separate technical advisors for such sites may not be necessary and would create extra cost.

Moreover, by using shared technical advisors, communities would get more consistent advice and more insight into how other similar sites are performing.

Recommendation 2

EPA should take advantage of community leadership to increase public involvement.

People prefer a leader they choose to a leader appointed by authority (Hughes, Ginnett, & Curphy, 2011). In the context of Superfund, the community involvement coordinator is someone appointed by EPA so even if he or she has strong leadership skills, community members might still prefer to be led by someone from their community. Moreover, a CIC has limited working hours which in turn limits his or her contact with community. Encouraging active community members with strong leadership to take the lead might increase community involvement because the CIC would get a chance to focus more on working closely with a few community leaders in contrast to sharing his or her availability with every community member.

Our research shows that active community members taking initiative have resulted in increased community involvement in Eastland Woolen Mill and Milltown Reservoir Sediments sites. Therefore, we would strongly recommend EPA change the method of community involvement from the CIC taking the lead in the majority of cases, to identifying capable community members and letting them take the lead while the CIC acts as an additional resource for them. Although this idea might not be applicable to all the sites, we encourage EPA to use this method whenever there is an opportunity to do so.

Recommendation 3

EPA should organize more social events to promote public awareness and education about the environment and the site.

Hale divides public involvement into three categories based on the intended outcome: public awareness, public education, and public participation (Hale, 1993). From our assessment of five-year reviews, we noticed that community involvement methods focus more on public participation and less on public awareness or education. Although CAGs and TAGs increase public awareness and education, only about 1% of long-term stewardship sites have CAGs and/or TAGs (EPAe, 2012).

The data we collected suggest that increased public awareness leads to increased public participation so we believe that it would be beneficial for EPA to invest some resources in increasing public awareness about the environment, contamination, and the site. The fishing derby at Resolve Inc. in Massachusetts is a great example of how increased public awareness of the site can contribute to increased public involvement.

Recommendation for further research

For further research in the future, more-in depth case studies of sites with different levels of public involvement are recommended to compare and contrast the effects of different factors influencing the level of public interest, as well as to get a wider range of opinions from EPA officials and the general public body. This was an exploratory project: we did not have an a priori understanding of the variables surrounding public involvement in the decision making process. We did not investigate the reasons for a high public involvement, but simply attempted to figure out what the possible reasons were. We believe that case studies focused on testing a hypothesis, investigating the multiple variables discovered in this project, would be able to compensate the limitations of this project and identify more factors associated with high public involvement.

5.4 Summary

In order to achieve the goal of this project, which is to provide more information about public involvement during long-term stewardship sites and thereby help EPA increase public involvement in long-term stewardship sites, we accomplished the following tasks:

- Developing a list of all sites on the National Priorities List that are currently under long-term stewardship.
- Reviewing each site and identifying the sites where unusual approaches are being used to increase public involvement.
- Assessing the benefits of Community Advisory Groups and Technical Assistance Grants on long-term stewardship sites.
- Assessing how unusual approaches affect the level of public involvement.
- Analyzing the data to draw a set of findings regarding public involvement in long-term stewardship sites.

From our interviews with EPA officials, we derived a list of findings using interpretative approaches for translating qualitative data. Combining our findings with literature reviews from research scholars, we arrived at a set of conclusions and recommendations for EPA, as well as suggestions for further research. We believe that the recommendations presented in this report are reliable and feasible to a certain extent, for increasing public involvement at long-term stewardship sites of the Superfund program. Suggested further research would be able to provide more reliable information because of the presence of a wider range of opinions and public involvement levels; therefore, such research is strongly recommended to further strengthen the results of this project.

Again, this was merely an initial exploratory project. Research of public involvement at the long-term stewardship phase is very limited, but numerous case studies have found public involvement crucial to success in a decision making process, which is very important for a site in long-term stewardship. This project was meant to investigate how extensive high public involvement is at this stage and possible reasons for it.

References

- Arnstein, Sherry R. (1969, July). *A Ladder of Citizen Participation*, JAIP, Vol. 35, No. 4, pp. 216-224.
- Berg, B. L. (2007). *Qualitative Research Methods for the Social Sciences*. Boston: Pearson Education Inc., pp. 339
- Chess, C., & Purcell, K. (1999). Public Participation and the Environment: Do We Know What Works? *Environmental Science and Technology*.
- DOE. (2012, March 06). *DOE Environmental Management (EM) Long-term Stewardship*. Retrieved from Department of Energy: <http://www.em.doe.gov/ltstewardship/ltstewardship.aspx>
- EPAa. (2012, January 12). *Community Resources | Superfund-Community Involvement*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/resources.htm>
- EPAb. (2012, January 03). *Basic Information | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/about.htm>
- EPAc. (2012, January 03). *Basic Information | Superfund - Community Involvement*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/about.htm>
- EPAd. (2011, August 09). *Cleanup Process | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/cleanup/index.htm>
- EPAe. (2012, February 01). *Where are Technical Assistance Grants (TAG)? | Technical Assistance Grant (TAG) | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/tag/whereare.htm>
- EPAf. (2011, August 09). *What is CAG? | Community Advisory Group (CAG)*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/cag/whatis.htm>
- EPAg. (2011, August 09). *The Superfund Process | Community Involvement | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/process.htm>
- EPAh. (1991, Jan 02). *Incorporating Citizen Concerns into Superfund Decision-making*. Retrieved from <http://www.epa.gov/superfund/community/cag/pdfs/directives/citizen.pdf>
- EPAi. (2011, December 12). *Institutional Controls (ICs) | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/policy/ic/index.htm>
- EPAj. (2012, January 27). *Law, Policy and Guidance | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/policy/index.htm>
- EPAk. (2011, August 09). *Long Term Response Action | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/cleanup/postconstruction/ltra.htm>

- EPAI. (2012, March 2). *National Priorities List*. Retrieved March 2, 2012, from Environmental Protection Agency: <http://www.epa.gov/superfund/sites/npl/index.htm>
- EPA.m. (2012, February 01). *Technical Assistance Grants (TAG) | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/community/tag/>
- EPA.n. (2011, September 28). *Preliminary Assessment/Site Inspection*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/cleanup/pasi.htm>
- EPA.o. (2011, August 09). *Record of Decision | Superfund*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/cleanup/rod.htm>
- EPA.p. (2011, August 09). *Remedial Investigation/Feasibility Study*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/superfund/cleanup/rifs.htm>
- EPA.q. (2012, May 16). *Resolve Inc*. Retrieved from Environmental Protection Agency: <http://www.epa.gov/region1/superfund/sites/resolve>
- EPA.r. (2011, February 10). *Superfund Site Overview Industrial Waste Processing, Pacific Southwest*. Retrieved from Environmental Protection Agency: <http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/cad980736284?OpenDocument>
- Hale. (1993). Successful Public Involvement. *Journal of Environmental Health* 55(4), pp. 17-19.
- Hughes, R., Ginnett, R., & Curphy, G. (2011). *Leadership: Enhancing the Lessons of Experience*.
- Knaap, G. J., Matier, D., & Olshansky, R. (2010). Citizen Advisory Groups in Remedial Action Planning: Paper Tiger or Key to Success? *Journal of Environmental Planning and Management*.
- Meyer, P. B. (2003). Land Reuse and Residual Contamination: Lessons from US Efforts at 'Risk-Based Corrective Action', (p. 10).
- Nguyen, D. (2011). *Optimization of Hazardous Waste Remediation Activities Using Life Cycle Assessment*.
- Probst, K. N., & McGovern, M. H. (1998). *Long Term Stewardship and the Nuclear Weapons Complex: The Challenge Ahead*. Washington: Resources for the Future.

Appendix A

List of all long-term stewardship sites and the sites reviewed in this project

State	Site Name	City	Reviewed? ⁵
Alabama	American Brass	Headland	Yes
	Ciba-Geigy Corp. (McIntosh Plant)	McIntosh	Yes
	Mowbray Engineering Co.	Greenville	Yes
	Perdido Ground Water Contamination	Perdido	Yes
	Redwing Carriers, Inc. (Saraland)	Saraland	Yes
	T.H. Agriculture & Nutrition Co. (Montgomery Plant)	Montgomery	Yes
	Triana/Tennessee River	Limestone, Morgan	Yes
	Alaska	Alaska Battery Enterprises	Fairbanks North Star Borough
Arctic Surplus		Fairbanks	Yes
Eielson Air Force Base		Fairbanks North Star Borough	Yes
Fort Richardson (USARMY)		Anchorage	Yes
Fort Wainwright		Fairbanks North Star Borough	Yes
Standard Steel & Metal Salvage Yard (USDOT)		Anchorage	Yes
American Samoa		Taputimu Farm	Taputimu
Arizona	Apache Powder Co.	St. David	Yes
	Hassayampa Landfill	Hassayampa	Yes
	Indian Bend Wash Area	Scottsdale	Yes
	Luke Air Force Base	Glendale	Yes
	Mountain View Mobile Home Estates	Globe	Yes
	Nineteenth Avenue Landfill	Phoenix	Yes
	Yuma Marine Corps Air Station	Yuma	Yes
	Arkansas	Arkwood, Inc.	Omaha
Cecil Lindsey		Newport	Yes
Gurley Pit		Edmondson	Yes
Industrial Waste Control		Ft. Smith	Yes
Jacksonville Municipal Landfill		Jacksonville	Yes
Mid-South Wood Products		Birta, Ola	Yes
Midland Products		Mena	Yes
Monroe Auto Equipment Co. (Paragould Pit)		Paragould	Yes
Mountain Pine Pressure Treating		Plainview	Yes
Ouachita Nevada Wood Treater	Reader	Yes	

⁵ Yes means the corresponding site was reviewed and blank means the site was not reviewed.

Investigation of Public Involvement in LTS Sites

	Popile, Inc.	El Dorado	Yes
	Rogers Road Municipal Landfill	Jacksonville	Yes
	South 8th Street Landfill	West Memphis	Yes
	Vertac, Inc.	Jacksonville	Yes
California	Advanced Micro Devices, Inc.	Sunnyvale	Yes
	Advanced Micro Devices, Inc. (Building 915)	Sunnyvale	Yes
	Applied Materials	Santa Clara	Yes
	Atlas Asbestos Mine	Fresno County	Yes
	Beckman Instruments (Porterville Plant)	Porterville	Yes
	Castle Air Force Base (6 Areas)	Merced	Yes
	Celtor Chemical Works	Hoopla	Yes
	Coalinga Asbestos Mine	Coalinga	Yes
	CTS Printex, Inc.	Mountain View	Yes
	Del Norte Pesticide Storage	Crescent City	Yes
	Fairchild Semiconductor Corp. (Mountain View Plant)	Mountain View	Yes
	Fairchild Semiconductor Corp. (South San Jose Plant)	South San Jose	Yes
	Firestone Tire & Rubber Co. (Salinas Plant)	Salinas	Yes
	Hewlett-Packard (620-640 Page Mill Road)	Palo Alto	Yes
	Industrial Waste Processing	Fresno	Yes
	Intel Corp. (Mountain View Plant)	Mountain View	Yes
	Intel Corp. (Santa Clara III)	Santa Clara	Yes
	Intel Magnetics	Santa Clara	Yes
	Intersil Inc./Siemens Components	Cupertino	Yes
	J.H. Baxter & Co.	Weed	Yes
	Jasco Chemical Corp.	Mountain View	Yes
	Jibboom Junkyard	Sacramento	Yes
	Koppers Co., Inc. (Oroville Plant)	Oroville	Yes
	Lawrence Livermore Laboratory (USDOE)	Livermore	Yes
	Liquid Gold Oil Corp.	Richmond	Yes
	Lorentz Barrel & Drum Co.	San Jose	Yes
	Louisiana-Pacific Corp.	Oroville	Yes
	Mather Air Force Base (AC&W Disposal Site)	Sacramento	Yes
	McColl	Fullerton	Yes
	MGM Brakes	Cloverdale	Yes
	Monolithic Memories	Sunnyvale	Yes
	National Semiconductor Corp.	Santa Clara	Yes
	Norton Air Force Base	San Bernardino	Yes

Investigation of Public Involvement in LTS Sites

	Pacific Coast Pipe Lines	Fillmore	Yes
	Pemaco Maywood	Maywood	Yes
	Ralph Gray Trucking Co.	Westminster	Yes
	Raytheon Corp.	Mountain View	Yes
	Riverbank Army Ammunition Plant	Riverbank	Yes
	Sacramento Army Depot	Sacramento	Yes
	San Fernando Valley (Area 3)	Glendale	Yes
	Selma Treating Co.	Selma	Yes
	Sharpe Army Depot	Lathrop	Yes
	Sola Optical USA, Inc.	Petaluma	Yes
	South Bay Asbestos Area	Alviso	Yes
	Southern California Edison Co. (Visalia Poleyard)	Visalia	Yes
	Spectra-Physics, Inc.	Mountain View	Yes
	Synertek, Inc. (Building 1)	Santa Clara	Yes
	T.H. Agriculture & Nutrition Co.	Fresno	Yes
	Teledyne Semiconductor	Mountain View	Yes
	TRW Microwave, Inc. (Building 825)	Sunnyvale	Yes
	Valley Wood Preserving, Inc.	Turlock	Yes
	Waste Disposal, Inc.	Santa Fe Springs	Yes
	Watkins-Johnson Co. (Stewart Division Plant)	Scotts Valley	Yes
	Western Pacific Railroad Co.	Oroville	Yes
	Westinghouse Electric Corp. (Sunnyvale Plant)	Sunnyvale	Yes
Colorado	Broderick Wood Products	Denver	Yes
	Chemical Sales Co.	Denver	Yes
	Denver Radium Site	Denver	Yes
	Eagle Mine	Minturn, Redcliff	Yes
	Lowry Landfill	Arapahoe County	Yes
	Marshall Landfill	Boulder County	Yes
	Rocky Flats Plant (USDOE)	Golden	Yes
	Sand Creek Industrial	Commerce City	Yes
	Smuggler Mountain	Pitkin County	Yes
	Uravan Uranium Project (Union Carbide Corp.)	Uravan	Yes
	Woodbury Chemical Co.	Commerce City	Yes
Commonwealth of Northern Marianas	PCB Warehouse	Garapan	Yes
Connecticut	Barkhamsted-New Hartford Landfill	Barkhamsted	Yes
	Beacon Heights Landfill	Beacon Falls	Yes
	Cheshire Ground Water Contamination	Cheshire	Yes
	Gallup's Quarry	Plainfield	Yes

Investigation of Public Involvement in LTS Sites

	Kellogg-Deering Well Field	Norwalk	Yes
	Laurel Park, Inc.	Naugatuck Borough	Yes
	Linemaster Switch Corp.	Woodstock	Yes
	Nutmeg Valley Road	Wolcott	Yes
	Old Southington Landfill	Southington	Yes
	Revere Textile Prints Corp.	Sterling	Yes
	Yaworski Waste Lagoon	Canterbury	Yes
Delaware	Army Creek Landfill	New Castle County	Yes
	Chem-Solv, Inc.	Cheswold	Yes
	Coker's Sanitation Service Landfills	Kent County	Yes
	Delaware City PVC Plant	Delaware City	Yes
	Delaware Sand & Gravel Landfill	New Castle County	Yes
	Dover Air Force Base	Dover	Yes
	E.I. du Pont de Nemours & Co., Inc. (Newport Pigment Plant Landfill)	Newport	Yes
	Halby Chemical Co.	New Castle	Yes
	Harvey & Knott Drum, Inc.	Kirkwood	Yes
	NCR Corp. (Millsboro Plant)	Millsboro	Yes
	New Castle Spill	New Castle County	Yes
	New Castle Steel	New Castle County	Yes
	Sealand Limited	Mount Pleasant	Yes
	Sussex County Landfill No. 5	Laurel	Yes
	Tybouts Corner Landfill	New Castle County	Yes
	Tyler Refrigeration Pit	Smyrna	Yes
	Wildcat Landfill	Dover	Yes
Florida	Agrico Chemical Co.	Pensacola	Yes
	Airco Plating Co.	Miami	
	Alaric Area Ground Water Plume	Tampa	Yes
	Alpha Chemical Corp.	Galloway	
	Anaconda Aluminum Co./Milgo Electronics Corp.	Miami	Yes
	B&B Chemical Co., Inc.	Hialeah	
	Beulah Landfill	Pensacola	Yes
	BMI-Textron	Lake Park	
	Brown Wood Preserving	Live Oak	Yes
	Callaway & Son Drum Service	Lake Alfred	
	Cecil Field Naval Air Station	Jacksonville	Yes
	Chemform, Inc.	Pompano Beach	
	Chevron Chemical Co. (Ortho Division)	Orlando	Yes
	City Industries, Inc.	Orlando	
	Coleman-Evans Wood Preserving Co.	Whitehouse	Yes
	Davie Landfill	Davie	

Investigation of Public Involvement in LTS Sites

	Dubose Oil Products Co.	Cantonment	Yes
	Flash Cleaners	Pompano Beach	
	Florida Steel Corp.	Indiantown	Yes
	Gold Coast Oil Corp.	Miami	
	Harris Corp. (Palm Bay Plant)	Palm Bay	Yes
	Hipps Road Landfill	Duval County	
	Hollingsworth Solderless Terminal	Fort Lauderdale	Yes
	Homestead Air Force Base	Homestead	
	Kassauf-Kimerling Battery Disposal	Tampa	Yes
	Madison County Sanitary Landfill	Madison	
	Miami Drum Services	Miami	Yes
	Munisport Landfill	North Miami	
	Northwest 58th Street Landfill	Hialeah	Yes
	Parramore Surplus	Mount Pleasant	
	Peak Oil Co./Bay Drum Co.	Tampa	Yes
	Pepper Steel & Alloys, Inc.	Medley	
	Pickettville Road Landfill	Jacksonville	Yes
	Pioneer Sand Co.	Warrington	
	Piper Aircraft Corp./Vero Beach Water & Sewer Department	Vero Beach	Yes
	Schuylkill Metals Corp.	Plant City	
	Sherwood Medical Industries	Deland	Yes
	Sixty-Second Street Dump	Tampa	
	Solitron Microwave	Port Salerno	Yes
	Standard Auto Bumper Corp.	Hialeah	
	Stauffer Chemical Co (Tampa)	Tampa	Yes
	Sydney Mine Sludge Ponds	Brandon	
	Taylor Road Landfill	Seffner	Yes
	Tri-City Oil Conservationist, Inc.	Tampa	
	United Metals, Inc.	Marianna	Yes
	Varsol Spill	Miami	
	Whitehouse Oil Pits	Whitehouse	Yes
	Wilson Concepts of Florida, Inc.	Pompano Beach	
	Wingate Road Municipal Incinerator Dump	Fort Lauderdale	Yes
	Woodbury Chemical Co. (Princeton Plant)	Princeton	
	Yellow Water Road Dump	Baldwin	Yes
	Zellwood Ground Water Contamination	Zellwood	
Georgia	Cedartown Industries, Inc.	Cedartown	Yes
	Cedartown Municipal Landfill	Cedartown	Yes
	Diamond Shamrock Corp. Landfill	Cedartown	Yes

Investigation of Public Involvement in LTS Sites

	Firestone Tire & Rubber Co. (Albany Plant)	Albany	Yes
	Hercules 009 Landfill	Brunswick	Yes
	Luminous Processes, Inc.	Athens	Yes
	Marine Corps Logistics Base	Albany	Yes
	Mathis Brothers Landfill (South Marble Top Road)	Kensington	Yes
	Monsanto Corp. (Augusta Plant)	Augusta	Yes
	Powersville Site	Peach County	Yes
	Robins Air Force Base (Landfill #4/Sludge Lagoon)	Houston County	Yes
Guam	Ordot Landfill	Ordot	Yes
Hawaii	Del Monte Corp. (Oahu Plantation)	Honolulu County	Yes
	Schofield Barracks (USARMY)	Oahu	Yes
Idaho	Arrcom (Drexler Enterprises)	Rathdrum	Yes
	Kerr-McGee Chemical Corp. (Soda Springs Plant)	Soda Springs	Yes
	Monsanto Chemical Co. (Soda Springs Plant)	Soda Springs	Yes
	Mountain Home Air Force Base	Mountain Home	Yes
	Pacific Hide & Fur Recycling Co.	Pocatello	Yes
	Union Pacific Railroad Co.	Pocatello	Yes
Illinois	A & F Materials Reclaiming, Inc.	Greenup	Yes
	Acme Solvents Reclaiming, Inc. (Morristown Plant)	Morristown	
	Adams County Quincy Landfills 2&3	Quincy	Yes
	Beloit Corp.	Rockton	
	Belvidere Municipal Landfill	Belvidere	Yes
	Byron Salvage Yard	Byron	
	Central Illinois Public Service Co.	Taylorville	Yes
	Cross Brothers Pail Recycling (Pembroke)	Pembroke Township	
	DuPage County Landfill/Blackwell Forest	Warrenville	Yes
	Galesburg/Koppers Co.	Galesburg	
	H.O.D. Landfill	Antioch	Yes
	Ilada Energy Co.	East Cape Girardeau	
	Interstate Pollution Control, Inc.	Rockford	Yes
	Jennison-Wright Corporation	Granite City	
	Johns-Manville Corp.	Waukegan	Yes
	Joliet Army Ammunition Plant (Load-Assembly-Packing Area)	Joliet	
	Joliet Army Ammunition Plant (Manufacturing Area)	Joliet	Yes

Investigation of Public Involvement in LTS Sites

	Kerr-McGee (Reed-Keppler Park)	West Chicago	
	Kerr-McGee (Residential Areas)	DuPage County, West Chicago	Yes
	Kerr-McGee (Sewage Treatment Plant)	West Chicago	
	LaSalle Electric Utilities	La Salle	Yes
	Lenz Oil Service, Inc.	Lemont	
	NL Industries/Taracorp Lead Smelter	Granite City	Yes
	Pagel's Pit	Rockford	
	Petersen Sand & Gravel	Libertyville	Yes
	Tri-County Landfill Co./Waste Management of Illinois, Inc.	South Elgin	
	Velsicol Chemical Corp. (Marshall Plant)	Marshall	Yes
	Wauconda Sand & Gravel	Wauconda	
	Woodstock Municipal Landfill	Woodstock	Yes
	Yeoman Creek Landfill	Waukegan	
Indiana	American Chemical Service, Inc.	Griffith	Yes
	Bennett Stone Quarry	Bloomington	
	Carter Lee Lumber Co.	Indianapolis	Yes
	Columbus Old Municipal Landfill #1	Columbus	
	Conrail Rail Yard (Elkhart)	Elkhart	Yes
	Douglass Road/Uniroyal, Inc., Landfill	Mishawaka	
	Envirochem Corp.	Zionsville	Yes
	Fisher-Calo	La Porte	
	Fort Wayne Reduction Dump	Fort Wayne	Yes
	Galen Myers Dump/Drum Salvage	Osceola	
	International Minerals & Chemicals Corp. (Terre Haute East Plant)	Terre Haute	Yes
	Lake Sandy Jo (M&M Landfill)	Gary	
	Lakeland Disposal Service, Inc.	Claypool	Yes
	Main Street Well Field	Elkhart	
	Marion (Bragg) Dump	Marion	Yes
	Neal's Dump (Spencer)	Spencer	
	Ninth Avenue Dump	Gary	Yes
	Northside Sanitary Landfill, Inc.	Zionsville	
	Poer Farm	Hancock County	Yes
	Prestolite Battery Division	Vincennes	
	Reilly Tar & Chemical Corp. (Indianapolis Plant)	Indianapolis	Yes
	Seymour Recycling Corp.	Seymour	
	Southside Sanitary Landfill	Indianapolis	Yes
	Tippecanoe Sanitary Landfill, Inc	Lafayette	
	Tri-State Plating	Columbus	Yes

Investigation of Public Involvement in LTS Sites

	Waste, Inc., Landfill	Michigan City	
	Wayne Waste Oil	Columbia City	Yes
	Wedzeb Enterprises, Inc.	Lebanon	
	Whiteford Sales & Service Inc./Nationalease	South Bend	Yes
Iowa	Aidex Corp.	Council Bluffs	Yes
	Des Moines TCE	Des Moines	
	E.I. du Pont de Nemours & Co., Inc. (County Road X23)	West Point	Yes
	Electro-Coatings, Inc.	Cedar Rapids	
	Fairfield Coal Gasification Plant	Fairfield	Yes
	Farmers' Mutual Cooperative	Hospers	
	John Deere (Ottumwa Works Landfills)	Ottumwa	Yes
	LaBounty Site	Charles City	
	Lawrence Todtz Farm	Camanche	Yes
	Mason City Coal Gasification Plant	Mason City	
	Mid-America Tanning Co.	Sergeant Bluff	Yes
	Midwest Manufacturing/North Farm	Kellogg	
	Northwestern States Portland Cement Co.	Mason City	Yes
	Peoples Natural Gas Co.	Dubuque	
	Railroad Avenue Groundwater Contamination	Des Moines	Yes
	Red Oak City Landfill	Red Oak	
	Shaw Avenue Dump	Charles City	Yes
	Sheller-Globe Corp. Disposal	Keokuk	
	Vogel Paint & Wax Co.	Orange City	Yes
	White Farm Equipment Co. Dump	Charles City	
Kansas	57th and North Broadway Streets Site	Wichita Heights	Yes
	Ace Services	Colby	
	Arkansas City Dump	Arkansas City	Yes
	Big River Sand Co.	Wichita	
	Chemical Commodities, Inc.	Olathe	Yes
	Doepke Disposal (Holliday)	Johnson County	
	Hydro-Flex Inc.	Topeka	Yes
	Johns' Sludge Pond	Wichita	
	Obee Road	Hutchinson	Yes
	Pester Refinery Co.	El Dorado	
	Strother Field Industrial Park	Cowley County	Yes
	Wright Ground Water Contamination	Wright	
Kentucky	A.L. Taylor (Valley of Drums)	Brooks	Yes
	Airco	Calvert City	
	B.F. Goodrich	Calvert City	Yes

Investigation of Public Involvement in LTS Sites

	Brantley Landfill	Island	
	Caldwell Lace Leather Co., Inc.	Auburn	Yes
	Distler Brickyard	West Point	
	Distler Farm	Jefferson County	Yes
	Fort Hartford Coal Co. Stone Quarry	Olaton	
	General Tire & Rubber Co. (Mayfield Landfill)	Mayfield	Yes
	Green River Disposal, Inc.	Maceo	
	Howe Valley Landfill	Howe Valley	Yes
	Lee's Lane Landfill	Louisville	
	National Electric Coil Co./Cooper Industries	Dayhoit	Yes
	National Southwire Aluminum Co.	Hawesville	
	Newport Dump	Newport	Yes
	Red Penn Sanitation Co. Landfill	Peewee Valley	
	Smith's Farm	Brooks	Yes
	Tri-City Disposal Co.	Shepherdsville	
Louisiana	Agriculture Street Landfill	New Orleans	Yes
	American Creosote Works, Inc. (Winnfield Plant)	Winnfield	Yes
	Bayou Bonfouca	Slidell	Yes
	Bayou Sorrel	Bayou Sorrel	Yes
	Central Wood Preserving Co.	Slaughter	Yes
	Cleve Reber	Sorrento	Yes
	Combustion, Inc.	Denham Springs	Yes
	D.L. Mud, Inc.	Abbeville	Yes
	Delatte Metals	Ponchatoula	Yes
	Dutchtown Treatment Plant	Ascension Parish	Yes
	Gulf Coast Vacuum Services	Abbeville	Yes
	Louisiana Army Ammunition Plant	Doyline	Yes
	Madisonville Creosote Works	Madisonville	Yes
	Mallard Bay Landing Bulk Plant	Grand Cheniere	Yes
	Old Inger Oil Refinery	Darrow	Yes
	PAB Oil & Chemical Service, Inc.	Abbeville	Yes
	Petro-Processors of Louisiana, Inc.	Scotlandville	Yes
	Ruston Foundry	Alexandria	Yes
	Southern Shipbuilding	Slidell	Yes
Maine	Brunswick Naval Air Station	Brunswick	Yes
	Eastern Surplus	Meddybemps	Yes
	Eastland Woolen Mill	Corinna	Yes
	Loring Air Force Base	Limestone	Yes
	McKin Co.	Gray	Yes

Investigation of Public Involvement in LTS Sites

	O'Connor	Augusta	Yes
	Pinette's Salvage Yard	Washburn	Yes
	Saco Municipal Landfill	Saco	Yes
	Saco Tannery Waste Pits	Saco	Yes
	Union Chemical Co., Inc.	South Hope	Yes
	West Site/Hows Corners	Plymouth	Yes
	Winthrop Landfill	Winthrop	Yes
Maryland	Aberdeen Proving Ground (Michaelsville Landfill)	Aberdeen	Yes
	Bush Valley Landfill	Abingdon	Yes
	Chemical Metals Industries, Inc.	Baltimore	Yes
	Limestone Road	Cumberland	Yes
	Mid-Atlantic Wood Preservers, Inc.	Harmans	Yes
	Middletown Road Dump	Annapolis	Yes
	Southern Maryland Wood Treating	Hollywood	Yes
	Woodlawn County Landfill	Woodlawn	Yes
Massachusetts	Atlas Tack Corp.	Fairhaven	Yes
	Baird & McGuire	Holbrook	Yes
	Cannon Engineering Corp. (CEC)	Bridgewater	Yes
	Charles-George Reclamation Trust Landfill	Tyngsborough	Yes
	Fort Devens-Sudbury Training Annex	Sudbury	Yes
	Groveland Wells	Groveland	Yes
	Hanscom Field/Hanscom Air Force Base	Bedford	Yes
	Hatheway and Patterson Company	Mansfield	Yes
	Hocomonco Pond	Westborough	Yes
	Materials Technology Laboratory (USARMY)	Watertown	Yes
	Norwood PCBs	Norwood	Yes
	Otis Air National Guard Base/Camp Edwards	Falmouth	Yes
	Plymouth Harbor/Cannon Engineering Corp.	Plymouth	Yes
	PSC Resources	Palmer	Yes
	Re-Solve, Inc.	Dartmouth	Yes
	Rose Disposal Pit	Lanesboro	Yes
	Salem Acres	Salem	Yes
	Silresim Chemical Corp.	Lowell	Yes
	Sullivan's Ledge	New Bedford	Yes
	W.R. Grace & Co., Inc. (Acton Plant)	Acton	Yes
Michigan	Adam's Plating	Lansing	Yes
	Aircraft Components (D & L Sales)	Benton Harbor	Yes
	Albion-Sheridan Township Landfill	Albion	Yes

Investigation of Public Involvement in LTS Sites

	American Anodco, Inc.	Ionia	Yes
	Anderson Development Co.	Adrian	Yes
	Auto Ion Chemicals, Inc.	Kalamazoo	Yes
	Avenue	Traverse City	Yes
	Bendix Corp./Allied Automotive	St. Joseph	Yes
	Berlin & Farro	Swartz Creek	Yes
	Burrows Sanitation	Hartford	Yes
	Butterworth #2 Landfill	Grand Rapids	Yes
	Cannelton Industries, Inc.	Sault Sainte Marie	Yes
	Carter Industrials, Inc.	Detroit	Yes
	Cemetery Dump	Rose Center	Yes
	Charlevoix Municipal Well	Charlevoix	Yes
	Chem Central	Wyoming Township	Yes
	Clare Water Supply	Clare	Yes
	Cliff/Dow Dump	Marquette	Yes
	Duell & Gardner Landfill	Dalton Township	Yes
	Electrovoice	Buchanan	Yes
	Folkertsma Refuse	Grand Rapids	Yes
	Forest Waste Products	Otisville	Yes
	G&H Landfill	Utica	Yes
	Grand Traverse Overall Supply Co.	Greilickville	Yes
	Gratiot County Golf Course	St. Louis	Yes
	Gratiot County Landfill	St. Louis	Yes
	H & K Sales	Belding	Yes
	H. Brown Co., Inc.	Grand Rapids	Yes
	Hedblum Industries	Oscoda	Yes
	Hi-Mill Manufacturing Co.	Highland	Yes
	Ionia City Landfill	Ionia	Yes
	J & L Landfill	Rochester Hills	Yes
	K&L Avenue Landfill	Oshtemo Township	Yes
	Kaydon Corp.	Muskegon	Yes
	Kent City Mobile Home Park	Kent City	Yes
	Kentwood Landfill	Kentwood	Yes
	Kysor Industrial Corp.	Cadillac	Yes
	Liquid Disposal, Inc.	Utica	Yes
	Lower Ecorse Creek Dump	Wyandotte	Yes
	Mason County Landfill	Pere Marquette Township	Yes
	McGraw Edison Corp.	Albion	Yes
	Metal Working Shop	Lake Ann	Yes
	Metamora Landfill	Metamora	Yes

Investigation of Public Involvement in LTS Sites

	Michigan Disposal Service (Cork Street Landfill)	Kalamazoo	Yes
	Motor Wheel, Inc.	Lansing	Yes
	Muskegon Chemical Co.	Whitehall	Yes
	Northernair Plating	Cadillac	Yes
	Novaco Industries	Temperance	Yes
	Organic Chemicals, Inc.	Grandville	Yes
	Ossineke Ground Water Contamination	Ossineke	Yes
	Ott/Story/Cordova Chemical Co.	Dalton Township	Yes
	Packaging Corp. of America	Filer City	Yes
	Parsons Chemical Works, Inc.	Grand Ledge	Yes
	Peerless Plating Co.	Muskegon	Yes
	Petoskey Municipal Well Field	Petoskey	Yes
	Rasmussen's Dump	Brighton	Yes
	Rose Township Dump	Rose Township	Yes
	Roto-Finish Co., Inc.	Kalamazoo	Yes
	SCA Independent Landfill	Muskegon Heights	Yes
	Shiawassee River	Howell	Yes
	South Macomb Disposal Authority (Landfills #9 and #9A)	Macomb Township	Yes
	Southwest Ottawa County Landfill	Park Township	Yes
	Sparta Landfill	Sparta Township	Yes
	Spiegelberg Landfill	Green Oak Township	Yes
	Springfield Township Dump	Davisburg	Yes
	Sturgis Municipal Wells	Sturgis	Yes
	Tar Lake	Mancelona Township	Yes
	Thermo-Chem, Inc.	Muskegon	Yes
	Torch Lake	Houghton County	Yes
	U.S. Aviex	Howard Township	Yes
	Velsicol Chemical Corp.(Michigan)	St. Louis	Yes
	Verona Well Field	Battle Creek	Yes
	Wash King Laundry	Pleasant Plains Township	Yes
	Waste Management of Michigan (Holland Lagoons)	Holland	Yes
	Whitehall Municipal Wells	Whitehall	Yes
Minnesota	Adrian Municipal Well Field	Adrian	Yes
	Agate Lake Scrapyard	Fairview Township	Yes
	Arrowhead Refinery Co.	Hermantown	Yes
	Boise Cascade/Onan Corp./Medtronics, Inc.	Fridley	Yes
	Burlington Northern (Brainerd/Baxter	Baxter, Brainerd	Yes

Investigation of Public Involvement in LTS Sites

	Plant)		
	Dakhue Sanitary Landfill	Cannon Falls	Yes
	East Bethel Demolition Landfill	East Bethel Township	Yes
	FMC Corp. (Fridley Plant)	Fridley	Yes
	Fridley Commons Park Well Field	Fridley	Yes
	General Mills/Henkel Corp.	Minneapolis	Yes
	Joslyn Manufacturing & Supply Co.	Brooklyn Center	Yes
	Koch Refining Co./N-Ren Corp.	Pine Bend	Yes
	Koppers Coke	St. Paul	Yes
	Kummer Sanitary Landfill	Bemidji	Yes
	Kurt Manufacturing Co.	Fridley	Yes
	LaGrand Sanitary Landfill	LaGrand Township	Yes
	Lehillier/Mankato Site	Lehillier	Yes
	Long Prairie Ground Water Contamination	Long Prairie	Yes
	MacGillis & Gibbs/Bell Lumber & Pole Co.	New Brighton	Yes
	Morris Arsenic Dump	Morris	Yes
	Naval Industrial Reserve Ordnance Plant	Fridley	Yes
	NL Industries/Taracorp/Golden Auto	St. Louis Park	Yes
	Nutting Truck & Caster Co.	Faribault	Yes
	Oak Grove Sanitary Landfill	Oak Grove Township	Yes
	Oakdale Dump	Oakdale	Yes
	Olmsted County Sanitary Landfill	Oronoco	Yes
	Perham Arsenic Site	Perham	Yes
	Pine Bend Sanitary Landfill	Dakota County	Yes
	Reilly Tar & Chemical Corp. (St. Louis Park Plant)	St. Louis Park	Yes
	Ritari Post & Pole	Sebeka	Yes
	South Andover Site	Andover	Yes
	South Minneapolis Residential Soil Contamination	Minneapolis	Yes
	St. Augusta Sanitary Landfill/Engen Dump	St. Augusta Township	Yes
	Twin Cities Air Force Reserve Base (Small Arms Range Landfill)	Minneapolis	Yes
	Union Scrap Iron & Metal Co.	Minneapolis	Yes
	University of Minnesota (Rosemount Research Center)	Rosemount	Yes
	Waite Park Wells	Waite Park	Yes
	Washington County Landfill	Lake Elmo	Yes
	Waste Disposal Engineering	Andover	Yes

Investigation of Public Involvement in LTS Sites

	Whittaker Corp.	Minneapolis	Yes
	Windom Dump	Windom	Yes
Mississippi	Flowood Site	Flowood	Yes
	Newsom Brothers/Old Reichhold Chemicals, Inc.	Columbia	Yes
	Walcotte Chemical Co. Warehouses	Greenville	Yes
Missouri	Annapolis Lead Mine	Annapolis	Yes
	Bee Cee Manufacturing Co.	Malden	Yes
	Conservation Chemical Co.	Kansas City	Yes
	Ellisville Site	Ellisville	Yes
	Fulbright Landfill	Springfield	Yes
	Kem-Pest Laboratories	Cape Girardeau	Yes
	Lee Chemical	Liberty	Yes
	Minker/Stout/Romaine Creek	Imperial	Yes
	Newton County Wells	Joplin	Yes
	North-U Drive Well Contamination	Springfield	Yes
	Quality Plating	Sikeston	Yes
	Shenandoah Stables	Moscow Mills	Yes
	Solid State Circuits, Inc.	Republic	Yes
	Syntex Facility	Verona	Yes
	Times Beach	Times Beach	Yes
	Valley Park TCE	Valley Park	Yes
	Weldon Spring Former Army Ordnance Works	St. Charles County	Yes
	Weldon Spring Quarry/Plant/Pits (USDOE/Army)	St. Charles County	Yes
	Wheeling Disposal Service Co., Inc., Landfill	Amazonia	Yes
Montana	Idaho Pole Co.	Bozeman	Yes
	Libby Ground Water Contamination	Libby	Yes
	Montana Pole and Treating	Butte	Yes
	Mouat Industries	Columbus	Yes
Nebraska	10th Street Site	Columbus	Yes
	Bruno Co-op Association/Associated Properties	Bruno	Yes
	Cleburn Street Well	Grand Island	Yes
	Lindsay Manufacturing Co.	Lindsay	Yes
	Ogallala Ground Water Contamination	Ogallala	Yes
	Parkview Well	Grand Island	Yes
	Sherwood Medical Co.	Norfolk	Yes
	Waverly Ground Water Contamination	Waverly	Yes
New Hampshire	Auburn Road Landfill	Londonderry	Yes
	Coakley Landfill	North Hampton	Yes

Investigation of Public Involvement in LTS Sites

	Kearsarge Metallurgical Corp.	Conway	Yes
	Keefe Environmental Services	Epping	Yes
	Mottolo Pig Farm	Raymond	Yes
	New Hampshire Plating Co.	Merrimack	Yes
	Ottati & Goss/Kingston Steel Drum	Kingston	Yes
	Pease Air Force Base	Newington, Portsmouth	Yes
	Savage Municipal Water Supply	Milford	Yes
	Somersworth Sanitary Landfill	Somersworth	Yes
	South Municipal Water Supply Well	Peterborough	Yes
	Sylvester	Nashua	Yes
	Tibbetts Road	Barrington	Yes
	Tinkham Garage	Londonderry	Yes
	Town Garage/Radio Beacon	Londonderry	Yes
	Troy Mills Landfill	Troy	Yes
New Jersey	A. O. Polymer	Sparta Township	Yes
	Asbestos Dump	Millington	Yes
	Beachwood/Berkley Wells	Berkley Township	Yes
	Bog Creek Farm	Howell Township	Yes
	Brook Industrial Park	Bound Brook	Yes
	Burnt Fly Bog	Marlboro Township	Yes
	Chemical Control	Elizabeth	Yes
	Chemical Insecticide Corp.	Edison Township	Yes
	Combe Fill North Landfill	Mount Olive Township	Yes
	Cooper Road	Voorhees Township	Yes
	Cosden Chemical Coatings Corp.	Beverly	Yes
	Curcio Scrap Metal, Inc.	Saddle Brook Township	Yes
	D'Imperio Property	Hamilton Township	Yes
	De Rewal Chemical Co.	Kingwood Township	Yes
	Delilah Road	Egg Harbor Township	Yes
	Denzer & Schafer X-Ray Co.	Bayville	Yes
	Dover Municipal Well 4	Dover	Yes
	Ellis Property	Evesham Township	Yes
	Ewan Property	Shamong Township	Yes
	Federal Creosote	Manville	Yes
	Florence Land Recontouring, Inc., Landfill	Florence Township	Yes
	Fort Dix (Landfill Site)	Pemberton Township	Yes
	Franklin Burn	Franklin Township	Yes

Investigation of Public Involvement in LTS Sites

	Friedman Property	Upper Freehold Township	Yes
	Garden State Cleaners Co.	Minotola	Yes
	GEMS Landfill	Gloucester Township	Yes
	Glen Ridge Radium Site	Glen Ridge	Yes
	Goose Farm	Plumstead Township	Yes
	Grand Street Mercury	Hoboken	Yes
	Helen Kramer Landfill	Mantua Township	Yes
	Higgins Disposal	Franklin Township	Yes
	Higgins Farm	Franklin Township	Yes
	Hopkins Farm	Plumstead Township	Yes
	Iceland Coin Laundry Area Ground Water Plume	Vineland	Yes
	Industrial Latex Corp.	Wallington Borough	Yes
	Jackson Township Landfill	Jackson Township	Yes
	JIS Landfill	Jamesburg, South Brunswick Township	Yes
	Kin-Buc Landfill	Edison Township	Yes
	King of Prussia	Winslow Township	Yes
	Krysowaty Farm	Hillsborough	Yes
	Landfill & Development Co.	Mount Holly	Yes
	Lang Property	Pemberton Township	Yes
	Lodi Municipal Well	Lodi	Yes
	Lone Pine Landfill	Freehold Township	Yes
	M&T Delisa Landfill	Asbury Park	Yes
	Mannheim Avenue Dump	Galloway Township	Yes
	Metaltec/Aerosystems	Franklin Borough	Yes
	Monitor Devices, Inc./Intercircuits, Inc.	Wall Township	Yes
	Monroe Township Landfill	Monroe Township	Yes
	Montclair/West Orange Radium Site	Montclair, West Orange	Yes
	Montgomery Township Housing Development	Montgomery Township	Yes
	Myers Property	Franklin Township	Yes
	Nascolite Corp.	Millville	Yes
	Naval Air Engineering Center	Lakehurst	Yes
	Pepe Field	Boonton	Yes
	Pijak Farm	Plumstead Township	Yes

Investigation of Public Involvement in LTS Sites

	Pomona Oaks Residential Wells	Galloway Township	Yes
	Reich Farms	Pleasant Plains	Yes
	Renora, Inc.	Edison Township	Yes
	Ringwood Mines/Landfill	Ringwood Borough	Yes
	Rockaway Township Wells	Rockaway Township	Yes
	Rocky Hill Municipal Well	Rocky Hill Borough	Yes
	Sayreville Landfill	Sayreville	Yes
	Sharkey Landfill	Parsippany, Troy Hills	Yes
	South Brunswick Landfill	South Brunswick	Yes
	South Jersey Clothing Co.	Minotola	Yes
	Spence Farm	Plumstead Township	Yes
	Tabernacle Drum Dump	Tabernacle Township	Yes
	U.S. Radium Corp.	Orange	Yes
	Upper Deerfield Township Sanitary Landfill	Upper Deerfield Township	Yes
	Vineland State School	Vineland	Yes
	W.R. Grace & Co., Inc./Wayne Interim Storage Site (USDOE)	Wayne Township	Yes
	Waldick Aerospace Devices, Inc.	Wall Township	Yes
	Williams Property	Swainton	Yes
	Wilson Farm	Plumstead Township	Yes
	Witco Chemical Corp. (Oakland Plant)	Oakland	Yes
	Woodland Route 532 Dump	Woodland Township	Yes
	Woodland Route 72 Dump	Woodland Township	Yes
New Mexico	AT & SF (Clovis)	Clovis	Yes
	AT&SF (Albuquerque)	Albuquerque	Yes
	Cal West Metals (USSBA)	Lemitar	Yes
	Cimarron Mining Corp.	Carrizozo	Yes
	Cleveland Mill	Silver City	Yes
	Fruit Avenue Plume	Albuquerque	Yes
	Homestake Mining Co.	Milan	Yes
	Lee Acres Landfill (USDOJ)	Farmington	Yes
	North Railroad Avenue Plume	Espanola	Yes
	Pagano Salvage	Los Lunas	Yes
	Prewitt Abandoned Refinery	Prewitt	Yes
	South Valley	Albuquerque	Yes

Investigation of Public Involvement in LTS Sites

	United Nuclear Corp.	Church Rock	Yes
New York	Action Anodizing, Plating, & Polishing Corp.	Copiague	Yes
	American Thermostat Co.	South Cairo	
	Anchor Chemicals	Hicksville	Yes
	Applied Environmental Services	Glenwood Landing	
	Batavia Landfill	Batavia	Yes
	BEC Trucking	Vestal	
	BioClinical Laboratories, Inc.	Bohemia	Yes
	Brewster Well Field	Brewster	
	Byron Barrel & Drum	Byron	Yes
	C & J Disposal Leasing Co. Dump	Hamilton	
	Carroll & Dubies Sewage Disposal	Port Jervis	Yes
	Circuitron Corp.	East Farmingdale	
	Claremont Polychemical	Old Bethpage	Yes
	Clothier Disposal	Town of Granby	
	Colesville Municipal Landfill	Town of Colesville	Yes
	Computer Circuits	Hauppauge	
	Conklin Dumps	Conklin	Yes
	Consolidated Iron and Metal	Newburgh	
	Ellenville Scrap Iron and Metal	Ellenville	Yes
	Endicott Village Well Field	Village of Endicott	
	Facet Enterprises, Inc.	Elmira	Yes
	FMC Corp. (Dublin Road Landfill)	Town of Shelby	
	Forest Glen Mobile Home Subdivision	Niagara Falls	Yes
	Fulton Terminals	Fulton	
	GCL Tie and Treating Inc.	Village of Sidney	Yes
	GE Moreau	South Glens Falls	
	Genzale Plating Co.	Franklin Square	Yes
	Goldisc Recordings, Inc.	Holbrook	
	Haviland Complex	Town of Hyde Park	Yes
	Hertel Landfill	Plattekill	
	Hiteman Leather	West Winfield	Yes
	Hooker (102nd Street)	Niagara Falls	
	Hooker (Hyde Park)	Niagara Falls	Yes
	Hooker (S Area)	Niagara Falls	
	Islip Municipal Sanitary Landfill	Islip	Yes
	Jackson Steel	Mineola, North Hempstead	
	Johnstown City Landfill	Town of Johnstown	Yes
	Jones Chemicals, Inc.	Caledonia	
	Jones Sanitation	Hyde Park	Yes

Investigation of Public Involvement in LTS Sites

	Katonah Municipal Well	Town of Bedford	
	Kenmark Textile Corp.	Farmingdale	Yes
	Li Tungsten Corp.	Glen Cove	
	Little Valley	Little Valley	Yes
	Love Canal	Niagara Falls	
	Ludlow Sand & Gravel	Clayville	Yes
	MacKenzie Chemical Works, Inc.	Central Islip	
	Malta Rocket Fuel Area	Malta	Yes
	Marathon Battery Corp.	Cold Springs	
	Mattiace Petrochemical Co., Inc.	Glen Cove	Yes
	Mohonk Road Industrial Plant	High Falls	
	Niagara County Refuse	Wheatfield	Yes
	North Sea Municipal Landfill	North Sea	
	Old Bethpage Landfill	Oyster Bay	Yes
	Pasley Solvents & Chemicals, Inc.	Hempstead	
	Peter Cooper	Gowanda	Yes
	Peter Cooper Corporation (Markhams)	Dayton	
	Pfohl Brothers Landfill	Cheektowaga	Yes
	Pollution Abatement Services	Oswego	
	Port Washington Landfill	Port Washington	Yes
	Preferred Plating Corp.	Farmingdale	
	Radium Chemical Co., Inc.	New York City	Yes
	Ramapo Landfill	Ramapo	
	Richardson Hill Road Landfill/Pond	Sidney Center	Yes
	Robintech, Inc./National Pipe Co.	Town of Vestal	
	Rosen Brothers Scrap Yard/Dump	Cortland	Yes
	Rowe Industries Ground Water Contamination	Noyack, Sag Harbor	
	Sarney Farm	Amenia	Yes
	Sealand Restoration, Inc.	Lisbon	
	Sidney Landfill	Sidney	Yes
	Smithtown Ground Water Contamination	Smithtown	
	SMS Instruments, Inc.	Deer Park	Yes
	Stanton Cleaners Area Ground Water Contamination	Great Neck	
	Suffern Village Well Field	Village of Suffern	Yes
	Syosset Landfill	Oyster Bay	
	Tri-Cities Barrel Co., Inc.	Port Crane	Yes
	Tronic Plating Co., Inc.	Farmingdale	
	Vestal Water Supply Well 1-1	Vestal	Yes
	Vestal Water Supply Well 4-2	Vestal	

Investigation of Public Involvement in LTS Sites

	Volney Municipal Landfill	Town of Volney	Yes
	Warwick Landfill	Warwick	
	Wide Beach Development	Brant	Yes
	York Oil Co.	Moira	
North Carolina	ABC One Hour Cleaners	Jacksonville	Yes
	Aberdeen Pesticide Dumps	Aberdeen	
	Barber Orchard	Waynesville	Yes
	Benfield Industries, Inc.	Hazelwood	
	Blue Ridge Plating Company	Arden	Yes
	Bypass 601 Ground Water Contamination	Concord	
	Cape Fear Wood Preserving	Fayetteville	Yes
	Carolina Transformer Co.	Fayetteville	
	Celanese Corp. (Shelby Fiber Operations)	Shelby	Yes
	Charles Macon Lagoon & Drum Storage	Cordova	
	Chemtronics, Inc.	Swannanoa	Yes
	Davis Park Road TCE	Gastonia	
	FCX, Inc. (Statesville Plant)	Statesville	Yes
	FCX, Inc. (Washington Plant)	Washington	
	Geigy Chemical Corp. (Aberdeen Plant)	Aberdeen	Yes
	General Electric Co/Shepherd Farm	East Flat Rock	
	Jadco-Hughes Facility	Belmont	Yes
	JFD Electronics/Channel Master	Oxford	
	Koppers Co., Inc. (Morrisville Plant)	Morrisville	Yes
	Martin-Marietta, Sodyeco, Inc.	Charlotte	
	National Starch & Chemical Corp.	Salisbury	Yes
	New Hanover County Airport Burn Pit	Wilmington	
	North Belmont PCE	North Belmont	Yes
	North Carolina State University (Lot 86, Farm Unit #1)	Raleigh	
	PCB Spills	Warrenton	Yes
	Potter's Septic Tank Service Pits	Maco	
	Reasor Chemical Company	Castle Hayne	Yes
	Sigmon's Septic Tank Service	Statesville	
North Dakota	Arsenic Trioxide Site	Lidgerwood, Rutland, Wyndmere	Yes
	Minot Landfill	Minot	
Ohio	AlSCO Anaconda	Gnadenhutten	Yes
	Arcanum Iron & Metal	Darke County	
	Big D Campground	Kingsville	Yes
	Bowers Landfill	Circleville	

Investigation of Public Involvement in LTS Sites

	Buckeye Reclamation	St. Clairsville	Yes
	Chem-Dyne	Hamilton	
	Chemical & Minerals Reclamation	Cleveland	Yes
	Coshocton Landfill	Franklin Township	
	E.H. Schilling Landfill	Hamilton Township	Yes
	Feed Materials Production Center (USDOE)	Fernald	
	Fultz Landfill	Jackson Township	Yes
	Industrial Excess Landfill	Uniontown	
	Laskin/Poplar Oil Co.	Jefferson Township	Yes
	Miami County Incinerator	Troy	
	Mound Plant (USDOE)	Miamisburg	Yes
	New Lyme Landfill	New Lyme	
	Old Mill	Rock Creek	Yes
	Ormet Corp.	Hannibal	
	Powell Road Landfill	Dayton	Yes
	Pristine, Inc.	Reading	
	Reilly Tar & Chemical Corp. (Dover Plant)	Dover	Yes
	Republic Steel Corp. Quarry	Elyria	
	Sanitary Landfill Co. (Industrial Waste Disposal Co., Inc.)	Dayton	Yes
	Skinner Landfill	West Chester	
	South Point Plant	South Point	Yes
	Summit National	Deerfield Township	
	TRW, Inc. (Minerva Plant)	Minerva	Yes
	United Scrap Lead Co., Inc.	Troy	
	Van Dale Junkyard	Marietta	Yes
	Wright-Patterson Air Force Base	Dayton	
	Zanesville Well Field	Zanesville	Yes
Oklahoma	Compass Industries (Avery Drive)	Tulsa	Yes
	Double Eagle Refinery Co.	Oklahoma City	
	Fourth Street Abandoned Refinery	Oklahoma City	Yes
	Hardage/Criner	Criner	
	Hudson Refinery	Cushing	Yes
	Imperial Refining Company	Ardmore	
	Mosley Road Sanitary Landfill	Oklahoma City	Yes
	Sand Springs Petrochemical Complex	Sand Springs	
	Tenth Street Dump/Junkyard	Oklahoma City	Yes
Oregon	Allied Plating, Inc.	Portland	Yes
	Fremont National Forest/White King and Lucky Lass Uranium Mines (USDA)	Lake County	

Investigation of Public Involvement in LTS Sites

	Gould, Inc.	Portland	Yes
	Joseph Forest Products	Joseph	
	Martin-Marietta Aluminum Co.	The Dalles	Yes
	McCormick & Baxter Creosoting Co. (Portland Plant)	Portland	
	Northwest Pipe & Casing/Hall Process Co	Clackamas	Yes
	Reynolds Metals Company	Troutdale	
	Taylor Lumber and Treating	Sheridan	Yes
	Teledyne Wah Chang	Albany	
	Union Pacific Railroad Co. Tie-Treating Plant	The Dalles	Yes
	United Chrome Products, Inc.	Corvallis	
Pennsylvania	A.I.W. Frank/Mid-County Mustang	Exton	Yes
	Aladdin Plating	Scott Township	
	Ambler Asbestos Piles	Ambler	Yes
	AMP, Inc. (Glen Rock Facility)	Glen Rock	
	Austin Avenue Radiation Site	Delaware County	Yes
	Avco Lycoming (Williamsport Division)	Williamsport	
	Bally Ground Water Contamination	Bally Borough	Yes
	Bell Landfill	Terry Township	
	Bendix Flight Systems Division	Bridgewater Township	Yes
	Berkley Products Co. Dump	Denver	
	Berks Landfill	Spring Township	Yes
	Berks Sand Pit	Longswamp Township	
	Blosenski Landfill	West Caln Township	Yes
	Boarhead Farms	Bridgeton Township	
	Brodhead Creek	Stroudsburg	Yes
	Brown's Battery Breaking	Shoemakersville	
	Bruin Lagoon	Bruin Borough	Yes
	Butler Mine Tunnel	Pittston	
	Butz Landfill	Stroudsburg	Yes
	C & D Recycling	Foster Township	
	Commodore Semiconductor Group	Lower Providence Township	Yes
	Craig Farm Drum	Parker	
	Croydon TCE	Croydon	Yes
	CryoChem, Inc.	Worman	
	Delta Quarries & Disposal, Inc./Stotler Landfill	Antis Township, Logan Township	Yes

Investigation of Public Involvement in LTS Sites

	Dorney Road Landfill	Upper Macungie Township	
	Douglassville Disposal	Douglassville	Yes
	Drake Chemical	Lock Haven	
	East Mount Zion	Springettsbury Township	Yes
	Eastern Diversified Metals	Hometown	
	Enterprise Avenue	Philadelphia	Yes
	Fischer & Porter Co.	Warminster	
	Foote Mineral Co.	East Whiteland Township	Yes
	Havertown PCP	Haverford	
	Hebelka Auto Salvage Yard	Weisenberg Township	Yes
	Heleva Landfill	North Whitehall Township	
	Hellertown Manufacturing Co.	Hellertown	Yes
	Henderson Road	Upper Merion Township	
	Hranica Landfill	Buffalo Township	Yes
	Hunterstown Road	Straban Township	
	Industrial Lane	Williams Township	Yes
	Jacks Creek/Sitkin Smelting & Refining, Inc.	Maitland	
	Keystone Sanitation Landfill	Union Township	Yes
	Kimberton	Kimberton Borough	
	Lackawanna Refuse	Old Forge Borough	Yes
	Lansdowne Radiation Site	Lansdowne	
	Lehigh Electric & Engineering Co.	Old Forge Borough	Yes
	Lindane Dump	Harrison Township	
	Lord-Shope Landfill	Girard Township	Yes
	Malvern TCE	Malvern	
	McAdoo Associates	McAdoo Borough	Yes
	Metal Banks	Philadelphia	
	Metropolitan Mirror and Glass Co., Inc.	Frackville	Yes
	Middletown Air Field	Middletown	
	Mill Creek Dump	Erie	Yes
	Modern Sanitation Landfill	Lower Windsor Township	
	Moyers Landfill	Eagleville	Yes
	MW Manufacturing	Valley Township	
	Naval Air Development Center (8 Waste Areas)	Warminster Township	Yes
	North Penn - Area 1	Souderton	

Investigation of Public Involvement in LTS Sites

	North Penn - Area 12	Worcester	Yes
	Novak Sanitary Landfill	South Whitehall Township	
	Occidental Chemical Corp./Firestone Tire & Rubber Co.	Lower Pottsgrove Township	Yes
	Ohio River Park	Neville Island	
	Old City of York Landfill	Seven Valleys	Yes
	Osborne Landfill	Grove City	
	Paoli Rail Yard	Paoli	Yes
	Presque Isle	Erie	
	Publicker Industries Inc.	Philadelphia	Yes
	Raymark	Hatboro	
	Recticon/Allied Steel Corp.	East Conventry Township	Yes
	Reeser's Landfill	Upper Macungie Township	
	Resin Disposal	Jefferson Borough	Yes
	Revere Chemical Co.	Nockamixon Township	
	River Road Landfill (Waste Management, Inc.)	Hermitage	Yes
	Rodale Manufacturing Co., Inc.	Emmaus Borough	
	Route 940 Drum Dump	Pocono Summit	Yes
	Saegertown Industrial Area	Saegertown	
	Shriver's Corner	Straban Township	Yes
	Stanley Kessler	King of Prussia	
	Strasburg Landfill	Newlin Township	Yes
	Taylor Borough Dump	Taylor Borough	
	Tobyhanna Army Depot	Tobyhanna	Yes
	Tonolli Corp.	Nesquehoning	
	Tyson's Dump	Upper Merion Township	Yes
	UGI Columbia Gas Plant	Columbia	
	Valmont TCE	West Hazleton	Yes
	Voortman Farm	Upper Saucon Township	
	Wade (ABM)	Chester	Yes
	Walsh Landfill	Honeybrook Township	
	Westinghouse Electric Corp. (Sharon Plant)	Sharon	Yes
	Westinghouse Elevator Co. Plant	Cumberland Township	
	Westline Site	Westline	Yes
	Whitmoyer Laboratories	Jackson Township	

Investigation of Public Involvement in LTS Sites

	York County Solid Waste and Refuse Authority Landfill	Hopewell Township	Yes
Puerto Rico	Barceloneta Landfill	Florida Afuera	Yes
	Fibers Public Supply Wells	Jobos	
	Frontera Creek	Rio Abajo	Yes
	GE Wiring Devices	Juana Diaz	
	Juncos Landfill	Juncos	Yes
	Naval Security Group Activity	Sabana Seca	
	RCA Del Caribe	Barceloneta	Yes
	Upjohn Facility	Barceloneta	
	V&M/Albaladejo	Almirante Norte Ward	Yes
	Vega Alta Public Supply Wells	Vega Alta	
Rhode Island	Central Landfill	Johnston	Yes
	Davis (GSR) Landfill	Glocester	
	Landfill & Resource Recovery, Inc. (L&RR)	North Smithfield	Yes
	Picillo Farm	Coventry	
	Rose Hill Regional Landfill	South Kingstown	Yes
	Stamina Mills, Inc.	North Smithfield	
	West Kingston Town Dump/URI Disposal Area	South Kingstown	Yes
	Western Sand & Gravel	Burrillville	
South Carolina	Aqua-Tech Environmental Inc. (Groce Laboratories)	Greer	Yes
	Beaunit Corp. (Circular Knit & Dye)	Fountain Inn	
	Carolawn, Inc.	Fort Lawn	Yes
	Elmore Waste Disposal	Greer	
	Geiger (C & M Oil)	Rantoules	Yes
	Golden Strip Septic Tank Service	Simpsonville	
	Helena Chemical Co. Landfill	Fairfax	Yes
	Independent Nail Co.	Beaufort	
	Kalama Specialty Chemicals	Beaufort	Yes
	Koppers Co., Inc. (Charleston Plant)	Charleston	
	Lexington County Landfill Area	Cayce	Yes
	Macalloy Corporation	North Charleston	
	Medley Farm Drum Dump	Gaffney	Yes
	Palmetto Recycling, Inc.	Columbia	
	Palmetto Wood Preserving	Dixiana	Yes
	Para-Chem Southern, Inc.	Simpsonville	
	Rochester Property	Travelers Rest	Yes
	Rock Hill Chemical Co.	Rock Hill	
	Sangamo Weston, Inc./Twelve-Mile	Pickens	Yes

Investigation of Public Involvement in LTS Sites

	Creek/Lake Hartwell PCB Contamination		
	SCRDI Bluff Road	Columbia	
	SCRDI Dixiana	Cayce	Yes
	Shuron Inc.	Barnwell	
	Townsend Saw Chain Co.	Pontiac	Yes
	Wamchem, Inc.	Burton	
South Dakota	Ellsworth Air Force Base	Rapid City	Yes
	Whitewood Creek	Whitewood	
	Williams Pipe Line Co. Disposal Pit	Sioux Falls	Yes
Tennessee	American Creosote Works, Inc. (Jackson Plant)	Jackson	Yes
	Amnicola Dump	Chattanooga	
	Arlington Blending & Packaging	Arlington	Yes
	Carrier Air Conditioning Co.	Collierville	
	Chemet Co.	Moscow	Yes
	Gallaway Pits	Gallaway	
	ICG Iselin Railroad Yard	Jackson	Yes
	Lewisburg Dump	Lewisburg	
	Mallory Capacitor Co.	Waynesboro	Yes
	Memphis Defense Depot (DLA)	Memphis	
	Murray-Ohio Dump	Lawrenceburg	Yes
	North Hollywood Dump	Memphis	
	Ross Metals Inc.	Rossville	Yes
	Tennessee Products	Chattanooga	
	Velsicol Chemical Corp. (Hardeman County)	Toone	Yes
Texas	Air Force Plant #4 (General Dynamics)	Fort Worth	Yes
	ALCOA (Point Comfort)/Lavaca Bay	Point Comfort	
	Bailey Waste Disposal	Bridge City	Yes
	Bio-Ecology Systems, Inc.	Grand Prairie	
	Brio Refining, Inc.	Friendswood	Yes
	City of Perryton Well No. 2	Perryton	
	Conroe Creosoting Company	Conroe	Yes
	Crystal Chemical Co.	Houston	
	Crystal City Airport	Crystal City	Yes
	Dixie Oil Processors, Inc.	Friendswood	
	French, Ltd.	Crosby	Yes
	Garland Creosoting	Longview	
	Geneva Industries/Fuhrmann Energy	Houston	Yes
	Gulfco Marine Maintenance	Freeport	
	Harris (Farley Street)	Houston	Yes

Investigation of Public Involvement in LTS Sites

	Hart Creosoting Company	Jasper	
	Highlands Acid Pit	Highlands	Yes
	Jasper Creosoting Company Inc.	Jasper	
	Koppers Co., Inc. (Texarkana Plant)	Texarkana	Yes
	Lone Star Army Ammunition Plant	Texarkana	
	Many Diversified Interests, Inc.	Houston	Yes
	Motco, Inc.	La Marque	
	North Cavalcade Street	Houston	Yes
	Odessa Chromium #1	Odessa	
	Odessa Chromium #2 (Andrews Highway)	Odessa	Yes
	Old ESCO Manufacturing	Greenville	
	Palmer Barge Line	Port Arthur	Yes
	Pantex Plant (USDOE)	Pantex Village	
	Pesses Chemical Co.	Fort Worth	Yes
	Petro-Chemical Systems, Inc. (Turtle Bayou)	Liberty County	
	Rockwool Industries Inc.	Bell County	Yes
	RSR Corp.	Dallas	
	Sheridan Disposal Services	Hempstead	Yes
	Sikes Disposal Pits	Crosby	
	Sol Lynn/Industrial Transformers	Houston	Yes
	South Cavalcade Street	Houston	
	Sprague Road Ground Water Plume	Odessa	Yes
	State Marine of Port Arthur	Jefferson County	
	State Road 114 Ground Water Plume	Levelland	Yes
	Stewco, Inc.	Waskom	
	Tex-Tin Corp.	Texas City	Yes
	Triangle Chemical Co.	Bridge City	
	United Creosoting Co.	Conroe	Yes
Utah	Eureka Mills	Eureka	Yes
	Intermountain Waste Oil Refinery	Bountiful	Yes
	International Smelting and Refining	Tooele	Yes
	Midvale Slag	Midvale	Yes
	Monticello Mill Tailings (USDOE)	Monticello	Yes
	Monticello Radioactively Contaminated Properties	Monticello	Yes
	Ogden Defense Depot (DLA)	Ogden	Yes
	Petrochem Recycling Corp./Ekotek, Inc.	Salt Lake City	Yes
	Portland Cement (Kiln Dust 2 & 3)	Salt Lake City	Yes
	Rose Park Sludge Pit	Salt Lake City	Yes
	Sharon Steel Corp. (Midvale Tailings)	Midvale	Yes

Investigation of Public Involvement in LTS Sites

	Utah Power & Light/American Barrel Co.	Salt Lake City	Yes
	Wasatch Chemical Co. (Lot 6)	Salt Lake City	Yes
Vermont	Bennington Municipal Sanitary Landfill	Bennington	Yes
	BFI Sanitary Landfill (Rockingham)	Rockingham	
	Burgess Brothers Landfill	Woodford	Yes
	Darling Hill Dump	Lyndon	
	Old Springfield Landfill	Springfield	Yes
	Parker Sanitary Landfill	Lyndon	
	Pine Street Canal	Burlington	Yes
	Pownal Tannery	Pownal	
	Tansitor Electronics, Inc.	Bennington	Yes
Virgin Islands	Island Chemical Corp./Virgin Islands Chemical Corp.	Christiansted	Yes
	Tutu Wellfield	Tutu	
Virginia	Arrowhead Associates, Inc./Scovill Corp.	Montross	Yes
	Buckingham County Landfill	Buckingham	
	C & R Battery Co., Inc.	Chesterfield County	Yes
	Chisman Creek	York County	
	Dixie Caverns County Landfill	Salem	Yes
	First Piedmont Corp. Rock Quarry (Route 719)	Pittsylvania County	
	Greenwood Chemical Co.	Newtown	Yes
	H & H Inc., Burn Pit	Farrington	
	Kim-Stan Landfill	Selma	Yes
	Matthews Electroplating	Roanoke County	
	Norfolk Naval Base (Sewells Point Naval Complex)	Norfolk	Yes
	Rentokil, Inc. (Virginia Wood Preserving Division)	Richmond	
	Rhinehart Tire Fire Dump	Frederick County	Yes
	Saunders Supply Co.	Chuckatuck	
	Suffolk City Landfill	Suffolk	Yes
	U.S. Titanium	Piney River	
Washington	ALCOA (Vancouver Smelter)	Vancouver	Yes
	American Crossarm & Conduit Co.	Chehalis	
	American Lake Gardens/McChord AFB	Tacoma	Yes
	Bangor Naval Submarine Base	Silverdale	
	Bangor Ordnance Disposal (USNAVY)	Bremerton	Yes
	Bonneville Power Administration Ross Complex (USDOE)	Vancouver	
	Centralia Municipal Landfill	Centralia	Yes
	Colbert Landfill	Spokane	

Investigation of Public Involvement in LTS Sites

	Commencement Bay, South Tacoma Channel	Tacoma	Yes
	FMC Corp. (Yakima)	Yakima	
	Fort Lewis (Landfill No. 5)	Tacoma	Yes
	Frontier Hard Chrome, Inc.	Vancouver	
	General Electric Co. (Spokane Shop)	Spokane	Yes
	Greenacres Landfill	Spokane County	
	Hamilton Island Landfill (USA/COE)	North Bonneville	Yes
	Hanford 1100-Area (USDOE)	Benton County	
	Hidden Valley Landfill (Thun Field)	Pierce County	Yes
	Lakewood	Lakewood	
	McChord Air Force Base (Wash Rack/Treatment Area)	Tacoma	Yes
	Mica Landfill	Mica	
	Midway Landfill	Kent	Yes
	Naval Air Station, Whidbey Island (Ault Field)	Whidbey Island	
	Naval Air Station, Whidbey Island (Seaplane Base)	Whidbey Island	Yes
	Naval Undersea Warfare Station (4 Areas)	Keyport	
	North Market Street	Spokane	Yes
	Northside Landfill	Spokane	
	Northwest Transformer	Everson	Yes
	Northwest Transformer (South Harkness Street)	Everson	
	Oeser Co	Bellingham	Yes
	Old Inland Pit	Spokane	
	Old Navy Dump/Manchester Laboratory (USEPA/NOAA)	Manchester	Yes
	Pacific Car & Foundry Co.	Renton	
	Pacific Sound Resources	Seattle	Yes
	Palermo Well Field Ground Water Contamination	Tumwater	
	Pesticide Lab (Yakima)	Yakima	Yes
	Port Hadlock Detachment (USNAVY)	Indian Island	
	Puget Sound Naval Shipyard Complex	Bremerton	Yes
	Queen City Farms	Maple Valley	
	Seattle Municipal Landfill (Kent Highlands)	Kent	Yes
	Silver Mountain Mine	Loomis	
	Spokane Junkyard/Associated Properties	Spokane	Yes
	Toftdahl Drums	Brush Prairie	
	Tulalip Landfill	Marysville	Yes

Investigation of Public Involvement in LTS Sites

	Vancouver Water Station #1 Contamination	Vancouver	
	Vancouver Water Station #4 Contamination	Vancouver	Yes
	Western Processing Co., Inc.	Kent	
	Yakima Plating Co.	Yakima	Yes
West Virginia	Follansbee	Follansbee	Yes
	Leetown Pesticide	Leetown	
	Ordnance Works Disposal Areas	Morgantown	Yes
	Vienna Tetrachloroethene	Vienna	
Wisconsin	Algoma Municipal Landfill	Algoma	Yes
	Better Brite Plating Chrome & Zinc Shops	DePere	
	City Disposal Corp. Landfill	Dunn	Yes
	Delavan Municipal Well #4	Delavan	
	Eau Claire Municipal Well Field	Eau Claire	Yes
	Fadrowski Drum Disposal	Franklin	
	Hagen Farm	Stoughton	Yes
	Hechimovich Sanitary Landfill	Williamstown	
	Hunts Disposal Landfill	Caledonia	Yes
	Janesville Ash Beds	Janesville	
	Janesville Old Landfill	Janesville	Yes
	Kohler Co. Landfill	Kohler	
	Lauer I Sanitary Landfill	Menomonee Falls	Yes
	Lemberger Landfill, Inc.	Whitelaw	
	Lemberger Transport & Recycling	Franklin Township	Yes
	Madison Metropolitan Sewerage District Lagoons	Blooming Grove	
	Master Disposal Service Landfill	Brookfield	Yes
	Mid-State Disposal, Inc. Landfill	Cleveland Township	
	Moss-American Co., Inc. (Kerr-McGee Oil Co.)	Milwaukee	Yes
	Muskego Sanitary Landfill	Muskego	
	N.W. Mauthe Co., Inc.	Appleton	Yes
	National Presto Industries, Inc.	Eau Claire	
	Northern Engraving Co.	Sparta	Yes
	Oconomowoc Electroplating Co., Inc.	Ashippun	
	Omega Hills North Landfill	Germantown	Yes
	Onalaska Municipal Landfill	Onalaska	
	Penta Wood Products	Daniels	Yes
	Refuse Hideaway Landfill	Middleton	
	Ripon City Landfill	Fond Du Lac County	Yes

Investigation of Public Involvement in LTS Sites

	Sauk County Landfill	Excelsior	
	Schmalz Dump	Harrison	Yes
	Scrap Processing Co., Inc.	Medford	
	Spickler Landfill	Spencer	Yes
	Stoughton City Landfill	Stoughton	
	Tomah Armory	Tomah	Yes
	Tomah Fairgrounds	Tomah	
	Tomah Municipal Sanitary Landfill	Tomah	Yes
	Waste Management of Wisconsin, Inc. (Brookfield Sanitary Landfill)	Brookfield	
	Wausau Ground Water Contamination	Wausau	Yes
	Wheeler Pit	La Prairie Township	
Wyoming	Baxter/Union Pacific Tie Treating	Laramie	Yes
	Mystery Bridge Rd/U.S. Highway 20	Evansville	
Federated States of Micronesia	PCB Wastes	Palikir	Yes