

# Chapter 1

## Site Evaluation Progress

By the end of FY95, nearly 40,000 potential hazardous waste sites had been identified and added to the Superfund inventory. EPA and states continued to evaluate these sites and had begun evaluation of more than 95 percent of these sites for potential threats to human health and the environment by the end of the year. To streamline the site evaluation process and decrease the amount of time required for site evaluations on specific candidate sites, EPA continued to use an integrated, single-assessment investigation process initiated by the Superfund Accelerated Cleanup Model (SACM). Integrated assessments involve consolidating some or all of the assessment steps, as well as other site studies, into a single, integrated site evaluation.

EPA announced the Brownfields Economic Redevelopment Initiative in January 1995. This initiative places a new focus on brownfields and is directed toward empowering states, local governments, communities and others to work together to assess, safely cleanup and sustainably brownfields. To further assist in the economic redevelopment, EPA amended the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) in such a way that sites identified in the CERCLA Information System (CERCLIS) as needing no further EPA financed response actions could be placed in a separate “archived” database. EPA also continued to address technical complexities associated with lead and radionuclide contamination, and improved site evaluation guidance.

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### 1.1 Site Evaluation Process

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The Superfund site evaluation process begins when EPA is notified of a potentially threatening hazardous waste site or incident. The Agency

records basic information about the site in the inventory of potential hazardous waste sites maintained in CERCLIS, which also tracks subsequent site specific actions and decisions. At sites that pose an immediate threat to human health, welfare, or the environment, EPA uses its removal authority under Comprehensive Environmental Response Cleanup and Liability Act (CERCLA) to address the threat. A Superfund removal action may be taken at any time during the evaluation process or after EPA has determined that no federal involvement is warranted under CERCLA if an immediate threat to human health or the environment is identified.

At other sites, a two-stage assessment is conducted consisting of: (1) a preliminary assessment (PA) to determine whether a potential threat exists; and, (2) a site inspection (SI) to determine the relative threat posed and to evaluate the site for possible listing on the National Priorities List (NPL). The NPL is the list of sites designated for long-term remedial evaluation and response.

At any point in the evaluation process, EPA may determine that the Superfund evaluation of the site is complete and no further steps to list the site on the NPL are needed. This decision does not necessarily mean that there is no hazard associated with the site. Rather, based on available information, the site does not meet the criteria for placement on the NPL. Sites not considered appropriate for the NPL might be addressed under the Resource Conservation and Recovery Act (RCRA), state laws, or other authorities.

EPA’s Brownfields Initiative announced by Administrator Carol Browner on January 25, 1995,

outlined EPA’s activities and future plans to help states and localities implement and realize the benefits of the Brownfields Initiative. Four key areas of action include awarding pilots, building partnerships with brownfields stakeholders; clarifying liability and cleanup issues; and fostering workforce development and job training. The brownfields effort will help reverse the downward spiral of unaddressed contamination, declining property values, and increased unemployment often found in inner city industrial areas and will continue to evolve as EPA seeks advice and input from a broad range of stakeholders.

As part of its effort to eliminate obstructions to the cleanup and redevelopment of previously used property, EPA removed and archived approximately 24,000 sites from CERCLIS in 1995. Historically, EPA has kept all sites in the CERCLIS inventory regardless of status. Even sites where no action was needed or taken remained on the list as part of EPA's tracking mechanism. Sites are archived, after investigation(s) have determined no further federal involvement is necessary. EPA initiated the archive process to eliminate any possible disincentive to purchase, improve, redevelop, and revitalize sites as a result of a mere inclusion of a site in CERCLIS. Sites are archived if EPA determines that:

- no contamination was found at the site;
- contamination was quickly removed without the need for the site to be placed on the NPL and associated enforcement actions are complete;
- the site, while contaminated, did not meet the criteria for inclusion on the NPL; or
- the contamination does not currently require any Superfund response actions.

Based on the FY93 *Superfund Administrative Improvements Final Report*, EPA established an initiative to enhance the state role in the NPL listing process. This initiative resulted in the development of the OSWER Directive (9375.6-11) “Guidance on Deferral of NPL Listing Determinations While States Oversee Response Actions.” This directive allows EPA to consider the deferral of an NPL site to the state or federally-recognized tribal government if

certain conditions are met and agreed upon by all parties involved. The guidance provides a framework for states, and federally-recognized tribes to determine the most appropriate, effective, and efficient means to cleanup sites. The guidance also accounts for differing capabilities of participating states and tribes.

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## **1.2 Fiscal Year 1995 Progress**

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During FY95, EPA continued its progress in identifying and assessing potential hazardous waste sites.

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### **1.2.1 CERCLIS Site Additions: Discoveries and Removals**

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EPA is notified of potential hazardous waste sites in a variety of ways. Information may be provided by states, handlers of hazardous materials, or concerned citizens. Local law enforcement officials may submit a formal report to EPA or facility managers may notify EPA of a release as required by CERCLA Section 103. Section 103 specifies that a person, such as a manager in charge of a vessel or facility, immediately report to the National Response Center any release of a hazardous substance of an amount that is equal to or greater than the reportable quantity for that substance. The National Response Center operates a 24-hour hotline for immediate notification. Penalties are imposed for failure to comply with this reporting requirement.

When the Agency is notified of a site that may pose a threat to human health or the environment, EPA records basic information about the site in CERCLIS. EPA added more than 700 sites to CERCLIS during FY95, bringing the total number of sites under Superfund to 39,000. Preliminary assessments have been or will be conducted to initially assess threats posed by these sites.

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### **1.2.2 Preliminary Assessments Completed**

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When notified of a potential hazardous waste site, EPA or the state will conduct a PA to assess the threat posed by the site. The PA can include either on-site or off-site reconnaissance activities, such as an on-site visit or survey, an off-site perimeter

survey, or collection of data from local authorities. EPA or the state will also review other existing site-specific information for such items as past state permitting activities, local population statistics, and any other information concerning the site's potential effect upon the environment. PA activities enable the Agency or state to determine whether further study of the site or a removal assessment/action is necessary.

EPA and states conducted more than 813 PAs in FY95. Since the inception of Superfund, PAs have been completed at approximately 36,913 sites. About 70 percent of these PAs resulted in no further action decisions under Superfund; the remainder have proceeded to the SI stage for more extensive evaluation.

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### **1.2.3 Site Inspections Completed**

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If the PA indicates that a potential threat to human health or the environment is posed by the site, EPA will perform an SI to determine whether the site should be proposed for listing on the NPL. The SI usually includes collecting and analyzing environmental and waste samples to identify:

- the hazardous substances present at the site;
- the concentrations of these substances;
- whether the substances are being released or there is potential for their release; and
- whether the identified hazardous substances are attributable to the site.

During the SI, data are gathered through increasingly focused collection efforts. For sites judged to be prospective candidates for the NPL, the data will be used to calculate a score using the Hazard Ranking System (HRS). The HRS serves as a screening device to evaluate and measure the relative threat a site poses to human health, welfare, or the environment and to determine whether the site is eligible for placement on the NPL. The HRS evaluates four pathways through which contaminants from a site may threaten human health or the environment: ground water, surface water, soil, and air.

The Agency and states completed 584 SIs during FY95 for a total of more than 17,584 SIs conducted since the inception of the Superfund program. About 50 percent of these SIs resulted in no further action decisions under Superfund. The remainder have undergone additional assessment, or are awaiting further EPA action such as proposal to the NPL.

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### **1.2.4 Site Inspection Prioritization**

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When the revised HRS was promulgated in response to a mandate in SARA, EPA could no longer use the original HRS for making NPL determinations. At that time, several thousand sites were eligible for NPL listing based on SIs conducted under the original HRS. EPA developed the site inspection prioritization (SIP) process to update preliminary HRS scores at those sites based on the revised HRS model.

SIPs were limited to 6,600 sites where an SI was conducted prior to August 1, 1992; but is also used to assist in identifying candidates for early actions under SACM. EPA completed approximately 1,800 SIPs in FY95. Most SIPs completed have resulted in no further action decisions.

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## **1.3 National Priorities List**

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The NPL is the list of sites for long-term remedial evaluation and response. EPA evaluates the potential hazard of sites using the HRS. If a site scores 28.50 or higher, the site is eligible for listing on the NPL. For those sites proposed to the NPL, the Agency solicits public comments for consideration, and then either announces the final site listing on the NPL or removes the site from consideration for listing. A site remains on the NPL until no further CERCLA response action is appropriate. When this condition is met, EPA deletes the site from the NPL.

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### **1.3.1 National Priorities List Update**

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At the end of FY95, 1,374 sites were proposed to, listed on, or deleted from the NPL: 1,236 currently listed sites, 58 proposed sites, and 81 deleted sites where all CERCLA cleanup goals have been achieved. Exhibit 1.3-1 illustrates the historical cumulative number of sites on the NPL for each

fiscal year since SARA was enacted in 1986. Sites deleted from the NPL reflect an activity required to be reported. At the end of FY95, the 1,374 sites proposed to, listed on, or deleted consisted of the following:

- 1,212 non-federal sites (1,083 currently listed sites, 52 proposed sites, 78 deleted sites); and
- 162 federal sites (153 currently listed sites, 6 proposed sites and 3 deleted sites).

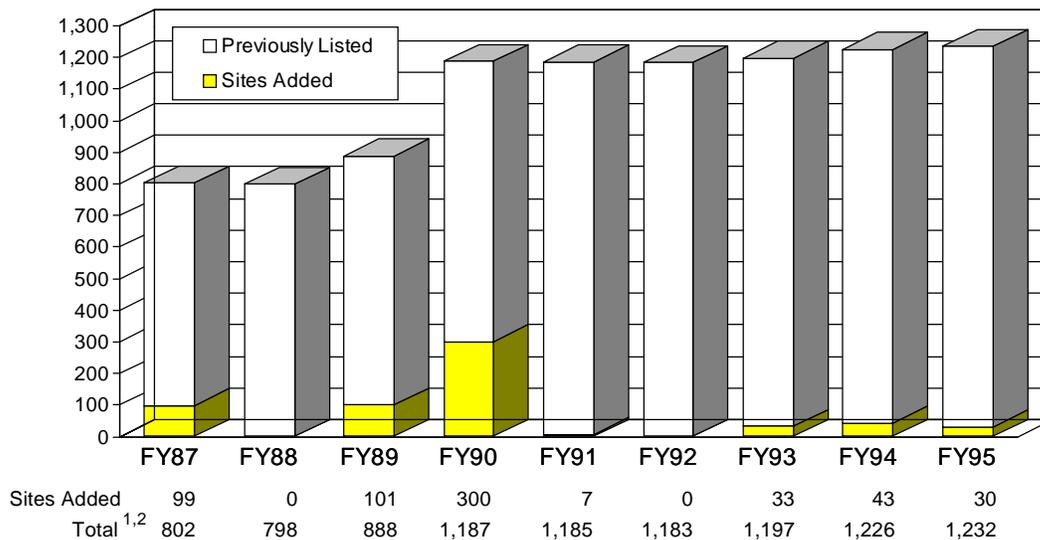
Updates to the NPL during FY95 included proposal of nine sites (7 non-federal and 2 federal facility sites), final listing of 30 sites (23 non-federal and 7 federal facility sites), and deletion of 25 sites (22 non-federal sites and 3 federal facility sites). Twenty-eight sites were proposed for deletion during the fiscal year, including 23 of the 25 sites that were deleted. These proposals to and listings on the NPL were included in one proposed rule (NPL Proposal 18) and four final rules. The proposed rules was published in the *Federal Register* on February 13,

1995 (7 non-federal sites and 2 federal sites). The final rules were published in the *Federal Register* on December 16, 1994 (14 non-federal sites and 4 federal sites), April 25, 1995 (3 non-federal sites and 1 federal site), May 26, 1995 (1 non-federal site), and September 29, 1995 (5 non-federal sites and 2 federal sites).

**1.3.2 Relationship Between CERCLIS and NPL Update**

CERCLIS is used to track the discovery of potential hazardous waste sites, including those that are subsequently listed on the NPL, and to track actions at these sites. Of the 39,000 sites in CERCLIS at the end of FY95, 1,374 were either proposed to, listed on, or deleted from the NPL. Although the sites on the NPL are a relatively small subset of the inventory in CERCLIS (approximately 3.4 percent), they generally are the most complex and environmentally significant sites. Under CERCLA, EPA can only use the Trust Fund for long-term remedial actions at NPL sites. Fund money,

**Exhibit 1.3-1  
Final NPL Sites for Fiscal Year 1987 Through Fiscal Year 1995**



<sup>1</sup> This graph illustrates *final* NPL sites only and reflects the fact that EPA deleted 13 sites from FY80 to FY86, 4 sites in FY88, 11 sites in FY89, 1 site in FY90, 9 sites in FY91, 2 sites in FY92, 11 sites in FY93, 13 sites in FY94, and 25 sites in FY95. At these deleted sites, all CERCLA cleanup objectives were achieved. In FY93, one additional site was deleted because it was deferred to another authority for cleanup. Also, eight sites were either voluntarily removed from the NPL or removed from the NPL by court order (seven sites in FY93 and one in FY94). The total of *final*, proposed, and deleted NPL sites as of September 30, 1995 was 1,232.

<sup>2</sup> The total number of sites listed final on the NPL from 1983 to 1986 was 703.

Source: *Federal Register* notices through September 30, 1995.

however, can be used to conduct a removal action at a site, whether or not it is on the NPL. Chapter 3 of this report discusses removal actions at NPL and non-NPL sites and Chapter 4 of this report highlights progress in remediating NPL sites.

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## **1.4 Site Evaluation Support Activities**

EPA manages two support programs dedicated to addressing lead and radionuclide contamination because these contaminants present special hazards and problems. During FY95, EPA continued its progress under these programs. Under the lead program, EPA continued to work on risk assessment procedures and tools as well as provide advice on national lead issues. Under the radiation program, EPA continued to develop Superfund guidance and examined environmental fate and transport modeling for radionuclides.

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### **1.4.1 Lead Program Progress**

Lead is one of the most frequently found toxic substances at Superfund sites. Exposure to lead at Superfund sites occurs by multiple media and EPA risk assessments consider all sources of exposure to more fully assess lead risks. In order to promote more consistent evaluations and continually improve upon our assessment and management practices, the use of Agency experts to provide advice on national lead issues has been part of the Agency's Administrative Reforms. During 1995, efforts were initiated to increase the involvement of site managers and senior managers in their interactions with the Lead Technical Review Workgroup.

#### **Lead Technical Review Workgroup**

The Lead Technical Review Workgroup provides advice and recommendations on lead risk assessment issues. This advice has included the development of guidance documents and review of individual risk assessments. While discussions with individual site managers have taken place on a regular basis, interactions with multiple site managers to identify information needs and prioritize activities was facilitated as a result of the formation of the Lead Sites Workgroup (LSW), a group of site managers that address lead issues from across different EPA regions and Headquarters.

Coordination and information sharing were also improved in FY95 through the exchange of information with senior regional and headquarters managers.

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### **1.4.2 Radiation Program Progress**

During the fiscal year, EPA made progress in addressing technical complexities associated with site assessment, risk assessment, and cleanup technology evaluation for sites contaminated with radionuclides. Specific activities included developing Superfund guidance, examining environmental fate and transport modeling, conducting technology demonstrations and evaluations, and providing technical support to the Regions.

#### **Site Assessment**

Through an interagency agreement with the Agency for Toxic Substances and Disease Registry, the Office of Radiation and Indoor Air (ORIA) provided assistance in conducting site evaluations and health assessment in areas near DOE nuclear weapons production facilities, including the San Ildefonso Indian Pueblo near the Los Alamos National Laboratory, the environs surrounding the Fernald Environmental Management Project, and the areas surrounding the Mound Laboratory site.

#### **Environmental Fate and Transport Modeling**

EPA continued to work with representatives from the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) as part of an interagency workgroup evaluating environmental fate and transport modeling for radionuclides. The interagency workgroup completed two guidance documents in FY95. The workgroup continued to prepare additional technical documents:

- *Draft Report: Three Multimedia Models Used in Support of Cleanup Decision making at Hazardous, Mixed, and Radioactive Waste Sites: A Technical Evaluation of MEAS, MMSOILS, and PRESTO-EPA-CPG.* Reviews three multimedia models of interest to the participants based on documentation published reviews, personal interviews with the model developers,

and on model summaries extracted from computer databases and expert systems.

- *Draft Report: A Review Guide for Model Applications at Sites Contaminated with Radioactive, Hazardous, and Mixed Waste Substances.* Documents a process by which ground-water flow and transport models may be applied, and how applications by others may be systematically reviewed during each phase of the remedial process.

### Support and Liaison Activities

EPA continued participation in an Interagency Steering Committee on Radiation Standards. Efforts focused on harmonizing the approaches taken by EPA and NRC to risk assessment and risk management involving radiation hazards. Other issues being studied include radiation cleanup standards, recycling, mixed waste and interagency cooperation.

EPA continued to provide technical assistance in the evaluation of proposals to exclude naturally occurring radioactive materials (NORM) from CERCLA as part of the reauthorization process. These efforts have included generation specific questions and answers, analyzing draft language, defining terms, establishing criteria for differentiating between NORM near background radiation levels and NORM where anthropogenic activity has concentrated these materials creating increased levels of risk. In addition, OERR has continued survey and tracking activities at sites with radionuclide or mixed waste contamination. This is accomplished in the Superfund NPL Assessment Program (SNAP).

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### 1.4.3 Site Evaluation Regulations and Guidance

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EPA published the following site evaluation regulations and guidance during FY95:

EPA issued a notice of proposed rulemaking for “Administrative Reporting Exemptions for Certain Radionuclide Releases” under CERCLA and EPCRA (40 CFR 302 and 40 CFR 355). These exemptions are for releases of naturally occurring

radionuclides associated with land disturbances incidental to extraction activities at certain kinds of mines, and for coal and coal ash piles at all sites. Future activities will involve responding to public comment and issuing a final rule.

During FY95, EPA issued final guidance on OSWER Directive (9375.6-11) “Guidance on Deferral of NPL Listing Determinations While States Oversee Response Actions.” This directive allows EPA to consider the deferral of an NPL site to the state or tribal organization if certain conditions are met and agreed upon by all parties involved. Since 1994, a total of eight sites have been formally deferred, while several sites have been informally deferred or are under consideration for deferral.

An interagency workgroup completed two guidance documents entitled “A Technical Guide to Ground-Water Model Selection at Sites Contaminated with Radioactive Substances” and “Evaluating Technical Capabilities of Ground-Water Models Used to Support the Cleanup of Low-Level Radioactive Waste Sites: An Illustrative Critique of Three Representative Models.” The first document addresses the selection of ground-water flow and contaminant transport models and the second study describes a process for critically evaluating the technical capabilities of ground-water models, using three models that have been used in remedial investigation/feasibility studies.

EPA continued to update toxicity information on radionuclides for the *Health Effects Assessment Summary Tables (HEAST)*;

EPA developed guidance for radionuclide toxicity assessment. At the end of FY95, the *Radiation Exposure and Risk Assessment Manual* was undergoing peer review;

EPA continued work on a toxicity manual for addressing risk assessment radiation issues. A draft document was produced and will be reviewed by other agencies and the Regions. This document, together with an exposure manual, will replace Chapter 10 of the Risk Assessment Guide for Superfund (RAGS).

EPA continued guidance development for determining the appropriate treatment options for soil contaminated with radionuclides.

EPA continued to develop standard cleanup levels for radioactive materials in soil and ground water at federal facility sites. The draft technical support document for the proposed *Radiation Site Cleanup Regulation* was submitted to the Science Advisory Board's Radiation Advisory Committee for review.

EPA continued development of a proposed *Federal Register* rule, "EPA Radiation Site Cleanup Regulation." This rule would establish cleanup levels for sites with radioactive contamination prior to the sale or public use of the site. It also specifies levels of cleanup necessary to protect human health and the environment.

EPA continued development of a fact sheet explaining how the rulemaking described above will become an Applicable or Relevant and Appropriate Requirement (ARAR) under CERCLA. Supplementing this fact sheet will be two supplementary guidance documents: (1) a 750-page document explaining how to set background radiation levels and apply relevant confidence levels for risk-based decision making; and, (2) a document which describes analytical methods for conducting measurements under the rule.

EPA sponsored an effort to develop a probabilistic decision support tool for evaluating wastes sites, including mixed waste sites.

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