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SUPERFUND

EPA's Costs to Remediate Existing and Future Sites Will Likely Exceed Current Funding Levels

Statement of John B. Stephenson, Director
Natural Resources and Environment



Mr. Chairman and Members of the Subcommittee:

I am pleased to be here to summarize the findings of our report on funding issues related to the Environmental Protection Agency's (EPA) Superfund program, which is being released today.[1] To protect human health and the environment from the effects of hazardous substances, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1980, which established the Superfund program.[2] Since 1980, EPA has identified more than 47,000 hazardous waste sites potentially requiring cleanup. As of the end of fiscal year 2009, 1,269 of the most seriously contaminated sites were included on EPA's National Priorities List (NPL): 1,111 nonfederal sites and 158 federal facilities.[3] At the time of listing, EPA had determined that these sites posed relatively high risks to human health or the environment from releases or threatened releases of hazardous substances, such as lead and polychlorinated biphenyl. These substances can cause a variety of health effects—such as birth defects, cancer, and developmental disorders—in people exposed to them. Of the nonfederal sites listed on the NPL at the end of fiscal year 2009, EPA identified 75 that have "unacceptable human exposure"—actual or reasonably expected exposure of an individual to hazardous substances, pollutants, or contaminants at levels that present an unacceptable risk—to contaminants for people living, recreating, and/or working in the surrounding areas. In addition, another 164 of the sites listed on the NPL at the end of fiscal year 2009 may potentially pose serious risks since EPA is in the process of determining if there is unacceptable human exposure at these sites.[4]

The Superfund cleanup process begins with the discovery of a potentially hazardous site or the notification to EPA of possible releases of hazardous

[1]GAO, *Superfund: EPA's Estimated Costs to Remediate Existing Sites Exceed Current Funding Levels, and More Sites Are Expected to Be Added to the National Priorities List*, GAO-10-380 (Washington, D.C.: May 6, 2010).

[2]Pub. L. No. 96-510 (1980), codified, as amended, at 42 U.S.C. §§ 9601-9675 (2010).

[3]The 158 federal facilities are owned and operated by federal agencies, such as the Departments of Defense, Energy, and the Interior.

[4]At the remaining 872 sites, EPA has determined that human exposure has been controlled, but additional work to clean up the sites may still be needed. EPA refers to sites with unacceptable human exposure as "current human exposures not under control" and sites with unknown human exposure as "insufficient data to determine human exposure control status."

substances that may threaten human health or the environment. EPA regional offices use a screening system called the Hazard Ranking System (HRS) to numerically assess sites' relative potential threat to human health and the environment. The HRS scores sites on four possible pathways of exposure: groundwater, surface water, soil, and air. Those sites with sufficiently high scores are eligible for proposal to the NPL.[5] EPA regions submit these sites to EPA headquarters for possible listing on the NPL on the basis of a variety of additional factors, including the availability of alternative state or federal programs and concurrence from the governor of the state or environmental agency head in which the site is located. Sites that EPA decides should be listed are proposed in the *Federal Register*. After a period of public comment, EPA reviews the comments and decides whether to formally list the sites as "final" on the NPL.

Once EPA lists a site, it is typically cleaned up through EPA's Superfund remedial program. EPA or a responsible party will begin the remedial process by conducting a remedial investigation and feasibility study to identify the nature and extent of contamination, quantify potential risks, and evaluate potential remedies.[6] The culmination of these studies is a Record of Decision (ROD), which identifies EPA's selected remedy for addressing the site's contamination.[7] The selected remedy is then designed during remedial design and implemented with construction activities in the remedial action phase, when actual cleanup of the site generally begins. When all physical construction at a site is complete, all immediate threats have been addressed, and all long-term threats are under control, EPA generally considers the site to be "construction complete." Of the

[5]While the HRS is the principal mechanism EPA uses to place sites on the NPL, two additional mechanisms can also be used. First, a site can be listed regardless of its HRS score if a state or territory designates the site as its single top-priority site. Second, a site may be listed if (1) the Agency for Toxic Substances and Disease Registry of the U.S. Public Health Service has issued a health advisory that recommends removing people from the site, (2) EPA determines the site poses a significant threat to public health, and (3) EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to address contamination at the site.

[6]For certain remedial actions, additional work at a site may be required after construction is completed, such as continuing groundwater restoration efforts or monitoring the site to ensure that the remedy remains protective. For EPA-lead remedial actions that have a groundwater or surface water restoration component, EPA funds the necessary activities—known as long-term response actions—for up to 10 years before turning over these responsibilities to the state.

[7]Cleanup at a site is often divided into smaller units (operable units) by geography, pathways of contamination, or type of remedy.

1,111 nonfederal sites listed on the NPL as of the end of fiscal year 2009, 695 had reached EPA's construction complete milestone, while the remaining 416 had not. Most sites then enter into the operation and maintenance phase, when the responsible party or the state maintains the remedy and EPA ensures that the remedy continues to protect human health and the environment. Eventually, when EPA and the state determine that no further site response is needed, EPA may delete the site from the NPL.[8]

NPL cleanup efforts are typically expensive and can take many years. While responsible parties are liable for conducting or paying for site cleanup of hazardous substances, in some cases, parties cannot be identified or may be unwilling or financially unable to perform the cleanup. To fund EPA-led cleanups at nonfederal NPL sites, EPA uses the Hazardous Substance Superfund (trust fund) from which EPA receives annual appropriations. Historically, the trust fund was financed primarily by taxes on crude oil and certain chemicals, as well as an environmental tax on corporations based on their taxable income; however, the authority for these taxes expired in 1995,[9] and shortly thereafter the balance in the trust fund started diminishing. Since 2001, appropriations from general revenues have been the largest source of funding for the trust fund. At the start of fiscal year 2009, the trust fund had a balance of $137 million. Superfund program appropriations have averaged about $1.2 billion annually since 1981, although the annual level of these appropriated funds has generally declined in recent years when adjusted for inflation.

In fiscal year 2009, EPA received about $1.29 billion for the Superfund program, of which approximately $605 million was for the remedial program.[10] Of this amount, EPA allocated $125 million for preconstruction activities—remedial investigation, feasibility study, and remedial design activities—as well as other nonconstruction activities, including conducting prelisting activities through cooperative agreements with states, oversight of all responsible party-lead activities, and providing general support and management. In addition, EPA allocated $267 million

[8]Although most sites progress through the cleanup process in roughly the same way, EPA may take different approaches based on site-specific conditions.

[9]The budget proposed by the administration for fiscal year 2011 reflects legislative proposals to reestablish a tax to support the Superfund program.

[10]The remaining $680 million was for other activities, such as emergency response and removal, enforcement, and operations and administration.

for remedial actions. EPA allocated the remaining $213 million for headquarters and regional personnel to implement and oversee the overall program; for site management; and for providing technical and analytical support for all non-NPL sites as well as proposed, final, and deleted NPL sites. In addition, as part of the American Recovery and Reinvestment Act of 2009 (Recovery Act), EPA's Superfund remedial program received an additional $600 million.[11]

My testimony today summarizes highlights from our report. Specifically, I will discuss (1) the cleanup and funding status at currently listed nonfederal NPL sites with unacceptable or unknown human exposure, (2) what is known about the future costs to EPA to conduct remedial actions at nonfederal NPL sites that are not construction complete, (3) the process EPA uses to allocate remedial program funding, and (4) the number of sites EPA and selected state officials expect will be added to the NPL over the next 5 years, and what they expect the costs of cleaning up those sites will be.

The findings of our report are based on an electronic survey of branch chiefs from the 10 EPA regions; data from EPA's Comprehensive Environmental Response, Compensation, and Liability Information System and Integrated Financial Management System; EPA guidance and planning documents; and interviews with officials from EPA headquarters and regional offices, 10 selected states, and the Association of State and Territorial Solid Waste Management Officials. The report contains a detailed overview of our scope and methodology. This work was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[11]Of the $600 million, EPA allocated $582 million to remedial cleanup activities and $18 million to internal EPA activities related to the management, oversight, and reporting of Superfund Recovery Act funds.

Considerable Work Remains at Most Nonfederal NPL Sites with Unacceptable or Unknown Human Exposure, and Some Site Cleanups Have Not Been Funded at the Most Efficient Level

As detailed in our report, over 60 percent of the 75 nonfederal NPL sites with unacceptable human exposure have all or more than half of the work remaining to complete remedial construction. According to EPA regional officials' responses to our survey, EPA has plans to control human exposure at all of the 75 sites with unacceptable human exposure; however, our survey results also show that EPA regional officials expect 41 of the sites to continue to have unacceptable exposure until fiscal year 2015 or later.[12] Similarly, over 60 percent of the 164 nonfederal NPL sites with unknown human exposure have all or more than half of the work remaining to complete remedial construction, according to EPA regional officials' responses to our survey. The majority of the sites with unknown human exposure that have all of the work remaining to complete construction are in the remedial investigation phase, which is when EPA usually determines a site's human exposure status, according to EPA guidance. EPA may also designate a site as having unknown human exposure during the construction phase of work, or after a site has met the construction complete milestone, if new information suggests that there may be risk at the site, or if an investigation is under way to assess a potential exposure pathway not previously analyzed.

Since CERCLA was passed in 1980 through the end of fiscal year 2009, EPA expended a total of $3 billion in constant 2009 dollars on the 75 sites with unacceptable exposure and $1.2 billion in constant 2009 dollars on the 164 sites where exposure is unknown, based on EPA data.[13] However, despite the relatively high level of expenditures at sites with unacceptable human exposure, EPA regional and headquarters officials told us that construction has not been conducted in the most timely and cost-efficient manner at some of these sites because EPA had to balance limited annual resources among various program activities. At the Eureka Mills site in Utah, people who are in contact with soil and dust contaminated with lead from mining activities face human health risks. From 2003 to 2008, the site received $6.6 million to $10 million a year for construction, even though regional officials said that an additional $3 to $5 million per year would have allowed them to complete construction at the site 3 to 4 years earlier

[12]Thirty of the 41 sites that EPA regional officials expect will continue to pose unacceptable risk until fiscal year 2015 or later are "teenager sites"—sites that have been on the NPL for at least 13 years.

[13]These totals include construction costs and all other appropriated site-specific Superfund expenditures through fiscal year 2009, except for reimbursable and homeland security supplemental expenditures.

at a reduced overall cost. However, with the addition of $26.5 million for the Eureka Mills site in fiscal year 2009 from Recovery Act funding, officials said that they will be able to complete construction at least 1 year earlier than planned and control human exposure at the site. In response to our survey, EPA regional officials noted that they are using Recovery Act funding to partially or completely control the unacceptable human exposure at 20 NPL sites. However, despite EPA's use of Recovery Act funds to control human exposure at these sites, EPA officials noted that EPA's constrained funding has caused delays in the control of human exposure at some sites.

EPA's Costs for Conducting Remedial Construction at Nonfederal NPL Sites Will Likely Exceed Recent Funding Levels for These Activities

As we noted in our report, EPA's annual costs to conduct remedial construction in the most efficient manner at nonfederal NPL sites for fiscal years 2010 through 2014 may range from $335 million to $681 million, according to EPA regional officials' estimates (see table 1).[14] These estimates include EPA's costs to conduct remedial actions at 142 of the 416 nonfederal sites that are not construction complete. For the remaining 274 sites, EPA regional officials were unable to provide cost estimates for 57 sites, expect responsible parties to fully fund remedial actions at 206 sites, and do not expect to incur additional costs to complete construction at 11 sites because these sites are already fully funded.

[14]Our survey asked EPA regional officials to provide the approximate projected costs to EPA to complete construction at a site in the most efficient manner, given what is currently known about contamination at a site. EPA regional officials provided cost estimates based on various information, including ROD estimates, estimates developed during remedial design or construction, and estimates developed during remedial investigations and feasibility studies. According to EPA officials, cost estimates for individual fiscal years for a site may change because of a number of factors, such as a site's construction readiness and contracting delays.

Table 1: EPA Regional Officials' Estimates of Costs to EPA to Conduct Remedial Construction in the Most Efficient Manner at Existing Nonfederal Sites on the NPL, as of September 30, 2009

Dollars in millions

Fiscal year	Cost
2010	$412
2011	681
2012	520
2013	420
2014	335
2015 and beyond	$3,036

Source: GAO analysis of EPA regional officials' responses to our survey.

Note: These data include EPA's cost estimates for 142 of the 416 nonfederal sites that are not construction complete. For the remaining 274 sites, EPA was unable to provide annual cost estimates for 57 sites, EPA indicated that responsible parties are fully funding remedial actions at 206 sites, and EPA does not expect to incur additional costs to complete construction at 11 sites. Unless otherwise specified, these numbers are as reported by EPA, and are not adjusted for inflation by GAO.

These annual cost estimates for remedial construction at these sites exceed past annual funding allocations for such actions. For example, EPA regional officials' cost estimates for remedial construction for the next 2 years—fiscal years 2011 and 2012—are $253 million to $414 million greater than the $267 million in annual funding that EPA allocated for remedial actions in fiscal year 2009. From fiscal years 2000 through 2009, EPA allocated $220 million to $267 million in annual funding for remedial actions. According to EPA headquarters officials, however, funds from additional sources—such as prior year funds, settlements with responsible parties, and state cost share agreements—may also be available to fund remedial construction from year to year. While the amount of funding available through these sources may vary substantially from year to year, according to EPA headquarters officials, approximately $123 to $199 million was available from additional sources for remedial actions in fiscal years 2007 through 2009. Our analysis indicates that, even if this level of funding were available in future years, it would not supplement EPA's annual funding allocation enough to cover the estimated costs for conducting remedial construction in fiscal years 2011 and 2012. Therefore, despite funding from additional sources, EPA's estimated costs to conduct remedial construction will exceed available funds if funding for remedial construction remains constant.

Furthermore, these annual cost estimates are likely understated. These officials were not able to provide annual construction cost estimates for 57

of the 416 nonfederal sites that are not yet construction complete because they are in the early stages of the remedial process, and EPA does not yet know the extent of the contamination and/or has not chosen a cleanup remedy for them.[15] For some additional sites, EPA regional officials were unable to provide cost estimates for construction at some of the operable units at the site. In addition, EPA regional officials' estimates did not include costs for conducting long-term response actions—such as operating groundwater treatment facilities—which are considered part of the remedial action, or for performing 5-year site reviews, both of which EPA funds from its remedial action allocation and would, therefore, increase the cost estimate for remedial actions.

EPA's estimates also did not include construction costs for sites that currently have a potentially responsible party that may be unable to fund the cleanup. EPA officials told us that EPA has identified one or more potentially responsible parties at 206 of the 416 nonfederal NPL sites that are not yet construction complete. However, officials also said that they were slightly or not at all confident that a responsible party would fund future remedial actions at 27 of these sites.

EPA headquarters and regional officials also told us that EPA's actual costs for construction are typically higher than its cost estimates because of a number of uncertainties. Most importantly, according to EPA officials, the extent of contamination at a site is often greater than EPA expected when it developed the cost estimate, which can expand the scope of work and remedies needed and increase overall construction costs. For example, we recently reported that at the Federal Creosote Superfund site in New Jersey, the greater-than-expected quantities of contaminated material contributed to a $111 million increase in construction costs over EPA's estimates.[16] Another factor that can increase construction costs is a change in acceptable contaminant levels. In addition, according to EPA, the actual costs of goods and services—such as energy, construction materials, and labor—may increase above estimated prices, causing an increase in the actual construction cost. EPA officials noted that there may be some instances when construction costs are overestimated because, for

[15]For 9 of the 57 sites, EPA officials did provide a broad range of costs for construction, but we did not include those costs in our analysis because EPA officials were unable to provide more precise, annual cost figures for those sites.

[16]GAO, *Superfund: Information on Cost and Other Issues Related to the Cleanup of the Federal Creosote Site*, GAO-10-277 (Washington, D.C.: February 25, 2010).

example, there is less contamination at a site than previously thought or the prices of goods and services decrease; however, the officials commented that this is rare. The frequent occurrence of additional unexpected costs enhances the likelihood that EPA's costs for remedial actions over the next several years will exceed recent funding levels for these activities, and EPA may be forced to choose between funding construction at some sites in the most efficient manner or funding construction at more sites less efficiently.

EPA Allocates Remedial Program Funding Separately for Preconstruction Activities and Remedial Actions, and Limited Funding Has Caused Delays at Some Sites

As explained in our report, EPA allocates funds separately for preconstruction activities—such as remedial investigation and remedial design—and remedial actions. EPA headquarters allocates funds for preconstruction activities to the regions for them to distribute among sites. EPA headquarters determines the amount of resources that the Superfund program will allocate to the regions by using a model that distributes available funding based on a combination of historical allocations and a work-based scoring system that scores each region based on projects planned for the upcoming year.[17] According to EPA's *Superfund Program Implementation Manual*, at the initiation of the planning process, headquarters provides general projections of funding for preconstruction activities that will be available to the regions. On the basis of these projections, each region then develops a plan for allocating these funds to sites. Before finalizing this plan, each region holds planning discussions with headquarters to discuss actions that can be accomplished during the year and alters its plans, as needed, based on refined projections of available funding from headquarters.

To allocate funding for remedial actions, EPA headquarters works in consultation with the regions to allocate funds on a site-by-site basis. EPA's *Superfund Program Implementation Manual* states that sites with ongoing construction receive priority for funding over new construction work. Headquarters develops the initial plan for ongoing construction based on regional funding requests, projections of available funding, and discussions with regional officials. According to EPA, the agency's goal in allocating funds is to ensure that all sites with ongoing construction

[17]As part of this allocation, EPA headquarters includes funding for other nonconstruction activities, including conducting prelisting activities through cooperative agreements with states, oversight of all responsible party-lead activities, and providing general support and management.

continue to progress toward construction completion while also funding some new construction projects.

According to EPA headquarters and regional officials, the funds for both preconstruction activities and remedial actions have not been sufficient to clean up some sites in the most timely and cost-efficient manner. EPA officials from several regions told us that their regions currently receive about half or less than half of the funding they could use for preconstruction activities. As a result, according to our survey, which collected data on fiscal years 2000 through 2009, most regions have sites that have experienced delays in the preconstruction phase because of insufficient funding. Similarly, sites with ongoing construction have experienced delays caused by limited funding, according to EPA officials. Since fiscal year 2000, most regions have experienced delays because of insufficient funding at one or more sites with ongoing construction, according to responses to our survey. According to several EPA regional officials, delays in funding for sites with ongoing construction increase the length of time it takes to clean up a site; the total cost of cleanup; and, in some cases, the length of time populations are exposed to contaminants. In addition, funding limitations have caused delays at sites that were ready to begin new construction. According to EPA *Superfund Accomplishment Reports*, between fiscal years 2004 and 2008, 54 sites, or over one-third of all sites ready for new construction funding, were not funded in the year that they were ready to begin construction, and some sites were not funded for several years after they were construction-ready.

EPA officials told us that EPA prioritized sites to receive the $582 million in American Recovery and Reinvestment Act funds allocated to remediation in a manner similar to the way EPA prioritizes sites for remedial actions. According to EPA headquarters officials, 25 sites needing new construction funding in fiscal year 2009 would most likely not have received funding had Recovery Act funding not been available.

Most EPA Regional and Selected State Officials Expect an Increase in the Number of Sites Added to the NPL over the Next 5 Years but Cannot Estimate the Cleanup Costs

Our report also notes that most of the EPA regional officials and state officials we interviewed told us they expect the number of sites listed on the NPL over the next 5 years will be greater than the number listed in the past 5 years. EPA regional officials estimate that from 101 to 125 sites—an average of 20 to 25 sites per year—will be added to the NPL over the next 5 years. This is higher than the 79 sites—an average of about 16 sites per year—added from fiscal years 2005 through 2009. As table 2 shows, all EPA regions expect that the number of sites added to the NPL over the next 5 years from their region could increase. According to EPA headquarters officials, the number of sites proposed for listing over time has decreased as a result of the expanded use of other cleanup programs, including state programs. Most of the officials who expect an increase in listings noted that current economic conditions—which can limit states' abilities to clean up sites under their own programs and responsible parties' abilities to pay for cleanup—are a contributing factor to the expected increase in listed sites.

Table 2: Comparison of the Number of Sites EPA Listed from Fiscal Year 2005 through 2009 and the Number of Sites Projected to Be Listed from Fiscal Years 2010 through 2014, by Region

EPA region	Number of sites EPA listed from fiscal year 2005 through fiscal year 2009	Number of sites EPA regional officials project will be added to the NPL over the next 5 years	Projected change in the number of sites listed
1	3	3 to 5	0 to + 2
2	12	15 to 20	+ 3 to 8
3	8	10 to 15	+ 2 to 7
4	14	20 to 25	+ 6 to 11
5	14	20	+ 6
6	9	10 to 15	+ 1 to 6
7	8	10	+ 2
8	4	5	+ 1
9	4	3 to 5	-1 to + 1
10	3	5	+ 2
All regions	79	101 to 125	+ 22 to 46

Sources: GAO analysis based upon EPA data and regional officials' projections.

Most of the officials we spoke with in the 10 selected states also expect that the number of sites listed from their states over the next 5 years could increase above the number of sites listed over the past 5 years, as table 3 shows. For example, officials from the Michigan Department of Natural

Resources and Environment said that they expect EPA to list five sites in Michigan to the NPL over the next 5 years, even though no sites have been listed from their state since 1996. These officials noted that the Superfund program has traditionally been a program of last resort, but declining resources in their state's cleanup program have renewed Michigan's interest in cleaning sites up through the federal program.

Table 3: Comparison of the Number of Sites EPA Listed from Each of the 10 States from Fiscal Years 2005 through 2009 and the Number of Sites State Officials Project May Be Listed from Fiscal Years 2010 through 2014, by State

State	Number of sites EPA listed from fiscal year 2005 through fiscal year 2009	Number of sites state officials project will be added from their states to the NPL over the next 5 years	Projected change in the number of sites listed
Maine	0	1 to 2	+ 1 to 2
New Jersey	6	15 to 25	+ 9 to 19
Virginia	1	1	0
Kentucky	0	0 to 1	0 to + 1
Michigan	0	5	+ 5
Louisiana	0	1	+ 1
Iowa	0	0	0
Montana	1	1 to 2	0 to + 1
California	3	5	+ 2
Washington	2	1 to 4	-1 to + 2

Sources: GAO analysis based upon EPA data and state agency officials' projections.

Neither EPA regional officials nor state officials we contacted were able to provide cost estimates for many of the sites they expect to be added to the NPL over the next 5 years. Furthermore, when these officials were able to provide cost estimates, most of them were imprecise figures based on limited knowledge and best professional judgment. Officials also explained that they could not provide cost estimates for some of the sites, because either the type and extent of contamination are not yet known, or officials have not yet identified the actual sites that may be listed. Therefore, it is impossible to accurately estimate what the cost may be to clean up these sites. However, we reported in July 2009 that the average amount EPA spent to clean up individual sites has increased in recent

years.[18] For example, EPA spent an average of approximately $7.5 million at sites that reached EPA's construction complete milestone in fiscal year 1999. EPA's expenditures increased to an average of about $10.2 million in total expenditures per site at sites reaching construction complete in fiscal year 2007. In that report, we noted that individual site costs may have increased because the sites on the NPL now are more complex than in the past, construction costs have been rising, and EPA has not been able to identify as many responsible parties to fund site cleanups as in the past, leaving a higher share for EPA to fund.

In addition to the number of sites that could be listed, the number of sites eligible for the NPL could increase if EPA begins to assess, as a part of its listing process, the risk of vapor intrusion caused by subsurface hazardous substances that have migrated via the air into homes and commercial properties. Although sites with vapor intrusion can pose considerable human health risks, EPA's HRS—the mechanism used to identify sites that qualify for NPL listing—does not currently recognize these risks; therefore, unless a site with vapor intrusion is listed on some other basis—such as groundwater contamination—EPA cannot clean up the site using remedial program funding. Many EPA regional officials and state officials noted that vapor intrusion is a concern, and several of these officials told us that they believe additional sites would be eligible for listing if assessments of vapor intrusion were included as part of the listing process. According to an EPA headquarters official, based on recent discussions with regional officials, up to 37 sites could be eligible for NPL listing if EPA includes vapor intrusion assessments as part of the listing process. However, according to EPA headquarters officials, EPA must first determine whether or not it can consider the vapor intrusion pathway under its existing HRS regulations, and it has not yet made such a determination. While these sites are not currently eligible for NPL listing, the EPA headquarters official noted that EPA is addressing vapor intrusion at 13 of these sites through its Superfund removal program; however, this official also told us that, when conducting removal actions, EPA is limited in its ability to fully remediate the source of contamination. For example, according to an official from the Montana Department of Environmental

[18]GAO, *Superfund: Litigation Has Decreased and EPA Needs Better Information on Site Cleanup and Cost Issues to Estimate Future Program Funding Requirements,* GAO-09-656 (Washington, D.C.: July 15, 2009).

Quality, preliminary data collected at the Billings PCE site[19]—which the official noted is not eligible for NPL listing—indicated vapor intrusion in buildings, and EPA conducted a removal action at this site. However, according to this official, it is unclear whether the removal action was effective in mitigating the vapor intrusion contamination, and people may continue to be exposed.

In conclusion, we found that limited funding for the Superfund program has caused delays in cleaning up some sites in recent years. This limited funding, coupled with increasing costs of cleanup, has forced EPA to choose between cleaning up a greater number of sites more slowly at higher cost and cleaning up fewer sites more quickly at lower cost. Compounding these challenges, EPA does not currently assess the relative risk posed by vapor intrusion when deciding which sites to include on the NPL, and assessing this risk could lead to an increase in the number of sites listed on the NPL. However, if these sites are not assessed and, if needed, listed on the NPL, some seriously contaminated hazardous waste sites with unacceptable human exposure may not be cleaned up. In our report being released today, we are recommending that the Administrator of EPA determine the extent to which EPA will consider vapor intrusion as part of the NPL listing process and how this will affect the number of sites listed in the future. EPA agreed with our recommendation.

Mr. Chairman, this concludes my prepared statement. I would be pleased to respond to any questions that you or Members of the Subcommittee may have at this time.

GAO Contact and Staff Acknowledgments

For questions about this statement, please contact John Stephenson at (202) 512-3841 or stephensonj@gao.gov. Individuals making key contributions to this testimony include Barbara Patterson and Vincent P. Price, Assistant Directors; Deanna Laufer; and Kyerion Printup. Elizabeth Beardsley, Pamela Davidson, and Mehrzad Nadji also made important contributions.

[19]PCE is perchloroethylene, which is a manufactured chemical used for dry cleaning and metal degreasing. Potential health effects from exposure to PCE include dizziness, headaches, sleepiness, confusion, nausea, difficulty in speaking and walking, loss of consciousness, and death.

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