

April 2013

SUPERFUND

EPA Should Take Steps to Improve Its Management of Alternatives to Placing Sites on the National Priorities List



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Why GAO Did This Study

Under the Superfund program, EPA may address the long-term cleanup of certain hazardous waste sites by placing them on the NPL and overseeing the cleanup. To be eligible for the NPL, a site must be sufficiently contaminated, among other things. EPA regions have discretion to choose among several other approaches to address sites eligible for the NPL. For example, under the Superfund program, EPA regions may enter into agreements with PRPs using the SA approach. EPA may also defer the oversight of cleanup at eligible sites to approaches outside of the Superfund program. GAO was asked to review EPA's implementation of the SA approach and how it compares with the NPL approach. This report examines (1) how EPA addresses the cleanup of sites it has identified as eligible for the NPL, (2) how the processes for implementing the SA and NPL approaches compare, and (3) how SA agreement sites compare with similar NPL sites in completing the cleanup process. GAO reviewed applicable laws, regulations, and guidance; analyzed program data as of December 2012; interviewed EPA officials; and compared SA agreement sites with 74 NPL sites selected based on their similarity to SA agreement sites.

What GAO Recommends

GAO recommends, among other things, that EPA issue guidance to define and clarify documentation requirements for OCA deferrals and clarify its policies on SA agreement sites. EPA agreed with the report's recommendations.

View [GAO-13-252](#). For more information, contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov.

SUPERFUND

EPA Should Take Steps to Improve Its Management of Alternatives to Placing Sites on the National Priorities List

What GAO Found

The Environmental Protection Agency (EPA) most commonly addresses the cleanup of sites it has identified as eligible for the National Priorities List (NPL) by deferring oversight of the cleanup to approaches outside of the Superfund program. As of December 2012, of the 3,402 sites EPA identified as potentially eligible, EPA has deferred oversight of 1,984 sites to approaches outside the Superfund program, including 1,766 Other Cleanup Activity (OCA) deferrals to states and other entities. However, EPA has not issued guidance for OCA deferrals as it has for the other cleanup approaches. Moreover, EPA's program guidance does not clearly define each type of OCA deferral or specify in detail the documentation EPA regions should have to support their decisions on OCA deferrals. Without clearer guidance on OCA deferrals, EPA cannot be reasonably assured that its regions are consistently tracking these sites or that their documentation will be appropriate or sufficient to verify that these sites have been deferred or have completed cleanup. Under the Superfund program, EPA oversees the cleanup of 1,313 sites on the NPL, 67 sites under the Superfund Alternative (SA) approach, and at least 38 sites under another undefined approach.

The processes for implementing the SA and NPL approaches, while similar in many ways, have several differences. EPA has accounted for some of these differences in its SA guidance by listing specific provisions for SA agreements with potentially responsible parties (PRP), such as owners and operators of a site. One such provision helps ensure cleanups are not delayed by a loss of funding if the PRP stops cleaning up the site. However, some EPA regions have entered into agreements with PRPs at sites that officials said were likely eligible for the SA approach without following the SA guidance. Such agreements may not benefit from EPA's provisions for SA agreements. EPA headquarters officials said the agency prefers regions to use the SA approach at such sites, but EPA has not stated this preference explicitly in its guidance. In addition, EPA's tracking and reporting of certain aspects of the process under the SA approach differs from that under the NPL approach. As a result, EPA's tracking of SA agreement sites in its Superfund database is incomplete; the standards for documenting the NPL eligibility of SA agreement sites are less clear than those for NPL sites; and EPA is not publicly reporting a full picture of SA agreement sites. Unless EPA makes improvements in these areas, its management of the process at SA agreement sites may be hampered.

The SA agreement sites showed mixed results in completing the cleanup process when compared with 74 similar NPL sites GAO analyzed. Specifically, SA agreement and NPL sites in GAO's analysis showed mixed results in the average time to complete negotiations with PRPs and for specific cleanup activities, such as remedial investigation and feasibility studies, remedial designs, and remedial actions. In addition, a lower proportion of SA agreement sites have completed cleanup compared with similar NPL sites. SA agreement sites tend to be in earlier phases of the cleanup process because the SA approach began more recently than the NPL approach. Given the limited number of activities for both NPL and SA agreement sites in GAO's analysis, these differences cannot be attributed entirely to the type of approach used at each site.

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Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EPA	Environmental Protection Agency
GPRA	Government Performance and Results Act of 1993
IG	Inspector General
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NRD	natural resource damages
OCA	Other Cleanup Activity
PRP	potentially responsible party
RCRA	Resource Conservation and Recovery Act
SA	Superfund Alternative

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Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

April 9, 2013

The Honorable Henry A. Waxman
Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable John D. Dingell
House of Representatives

The Environmental Protection Agency (EPA) estimates that one in four Americans lives within 3 miles of a hazardous waste site. Many hazardous waste sites pose serious risks to human health and the environment, and their cleanup can be expensive and take many years to complete. While these sites may not necessarily be subject to a federal cleanup requirement, several approaches exist to address such long-term cleanups. EPA manages the Superfund program—the federal government’s principal program to clean up hazardous waste sites—under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.¹ Under this program, EPA can place sites with contamination that is sufficiently severe on the National Priorities List (NPL), a list of sites for attention under the federal Superfund program that includes sites among the nation’s most seriously contaminated.² At sites on the NPL, EPA oversees the cleanup, which may be performed by potentially responsible parties (PRP)³ or by EPA itself. Aside from placing an eligible site on the NPL, EPA can also ensure cleanup through the

¹CERCLA, Pub. L. No. 96-510, 94 Stat. 2767 (1980) (codified as amended at 42 U.S.C. §§ 9601- 9675 (2012)). Hereinafter, references to CERCLA sections are as amended.

²There is no legal requirement that EPA clean up a site on the NPL or that it do so under a particular time frame. As we have previously reported, EPA’s future costs to conduct remedial construction at nonfederal NPL sites will likely exceed recent funding levels. The limited funding, coupled with increasing costs of cleanup, has forced EPA to choose between cleaning up a greater number of sites in a less time and cost-efficient manner or cleaning up fewer sites more efficiently. See 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).

³PRPs generally include current or former owners and operators of a site or the generators or transporters of the hazardous substances.

Superfund Alternative (SA) approach.⁴ Under this approach, PRPs agree to clean up sites (hereafter referred to as SA agreement sites), and EPA does not list the sites on the NPL at that time, which allows PRPs to avoid the perceived stigma of having a site on the NPL. Since EPA first issued guidance on the SA approach in 2002, EPA and its Office of Inspector General (IG) have evaluated the approach and made various recommendations to improve its implementation. In 2010, EPA reported to the IG that it had implemented the recommended actions.⁵ Where EPA decides not to address the site under the Superfund program (i.e., list the site on the NPL, use the SA approach, or otherwise retain oversight), EPA may defer⁶ sites whose contamination makes them eligible for the NPL to other federal and state cleanup approaches.⁷

EPA's regional offices may discover potential hazardous waste sites, or such sites may come to EPA's attention through reports from other federal agencies, state agencies, or citizens. EPA then reviews available information about each site to decide whether to add it to the Superfund program database—the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). At some point after a site is added to CERCLIS, EPA assesses the severity of the contamination at the site to determine whether the site is eligible to be placed on the NPL. If the site has some contamination but is not eligible for the NPL, EPA will not pursue a long-term cleanup under the Superfund program; state cleanup programs or other programs may still address the contamination at the site. Long-term cleanups at sites eligible for the NPL that are conducted under the Superfund program generally follow an established process. This process consists of several phases, including studying site conditions, selecting a method to clean up the site,

⁴Where hazardous waste sites are owned or controlled by a federal agency, that agency may also have a significant role in cleanup. Processes and provisions specific to these federal sites are generally not discussed in this report and, according to EPA, the SA approach has not been used at a federal site.

⁵We did not assess the extent to which EPA implemented all of the IG's recommendations because it was beyond the scope of our review.

⁶For purposes of this report, deferral refers to sites where EPA elects not to use its Superfund authorities for a long-term cleanup because another program will provide oversight of the site's cleanup.

⁷Forty-seven states have followed the federal government's lead and established their own version of the Superfund program to identify and clean up sites not covered by the federal program.

and conducting the actual cleanup. In some cases, cleanup of a site is divided into smaller parts, known as operable units, and cleanup may proceed at different rates at each of these operable units.⁸ To accomplish the cleanup, EPA may, among other options, negotiate and enter into agreements with PRPs for them to address contamination at the site. These agreements may cover one or more phases of the cleanup process and may address one or more operable units. Furthermore, EPA may enter into more than one agreement with a PRP at a site. Alternately, for sites listed on the NPL, EPA may conduct the cleanup itself and pursue costs from PRPs through administrative or judicial actions.

In addition to conducting long-term cleanups, EPA may use its Superfund emergency response authorities to conduct removal actions at sites. Removal actions are usually short-term cleanups at sites that pose immediate threats to human health or the environment. Under the removal program, EPA has conducted thousands of cleanup actions instead of or in combination with long-term cleanups.

In this context, you asked us to review the implementation of the SA approach and how this approach compares to listing sites on the NPL. Our objectives were to examine (1) how EPA addresses the cleanup of sites it has identified as eligible for the NPL, (2) how the processes for implementing the SA and NPL approaches compare, and (3) how SA agreement sites compare with similar NPL sites in completing the cleanup process.

To conduct this work, we analyzed applicable federal laws and EPA regulations and guidance to understand the available approaches to address hazardous waste sites that are reported to the Superfund program and have a level of contamination that makes them eligible for the NPL. We also conducted interviews with officials in all 10 EPA regions. To determine how EPA addresses the cleanup of sites eligible for the NPL, we analyzed EPA data from the CERCLIS database to establish the number of such sites that are being addressed through each approach as of December 2012. To assess the reliability of these data, we analyzed related documentation, examined the data for errors or inconsistencies, and interviewed agency officials about any known data

⁸Operable units may address geographical portions of a site, specific site problems, or initial phases of a cleanup action.

problems and to learn more about their procedures for maintaining the data. We determined the data to be sufficiently reliable for calculating durations for completing different cleanup activities, including negotiations, at SA agreement and NPL sites. We also interviewed a nonprobability, convenience sample of officials from 13 state cleanup programs who were familiar with available cleanup approaches. The sample consisted of representatives from state environmental departments taking part in an Association of State and Territorial Solid Waste Management Officials conference call who agreed to speak with us. Because this was a nonprobability sample, the results of our analysis cannot be generalized to all states; however, these officials provided important information about the cleanup process. To compare the processes for implementing the SA and NPL approaches, including the cleanup process and EPA's oversight, we discussed the processes with EPA headquarters officials and officials from all 10 of EPA's regions, obtained relevant supporting documentation, and analyzed previous reviews of the SA approach. To determine how SA agreement sites compare with similar NPL sites in completing the cleanup process, we constructed a comparison group of 74 NPL sites with agreements between EPA and PRPs similar to agreements at 66 SA agreement sites.⁹ For example, all sites had agreements that were entered into from June 2002 through December 2012 that involved cleanup actions at the site. Additionally, to match the characteristics of most SA agreements, we included only NPL agreements involving relatively few PRPs and agreements whose estimated costs were similar to costs at SA agreement sites. Once we identified the group of NPL sites from these agreements, we compared the duration of relevant cleanup actions, including negotiations, with those at SA agreement sites. The 74 NPL sites that were selected for comparison with SA agreement sites are not representative of the universe of all NPL sites because they were selected based on specific criteria. For example, we selected for comparison only NPL sites at which a PRP agreed to conduct at least some part of the cleanup. The results of our analysis cannot be generalized to all NPL sites; however, these sites can provide important information about the cleanup process. Appendix I provides a more detailed description of our objectives, scope, and methodology.

⁹Our analysis of how SA agreement sites compare with similar NPL sites in completing the cleanup process did not include all SA agreement sites because some of these sites did not have relevant cleanup activities.

We conducted this performance audit from December 2011 to April 2013 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.

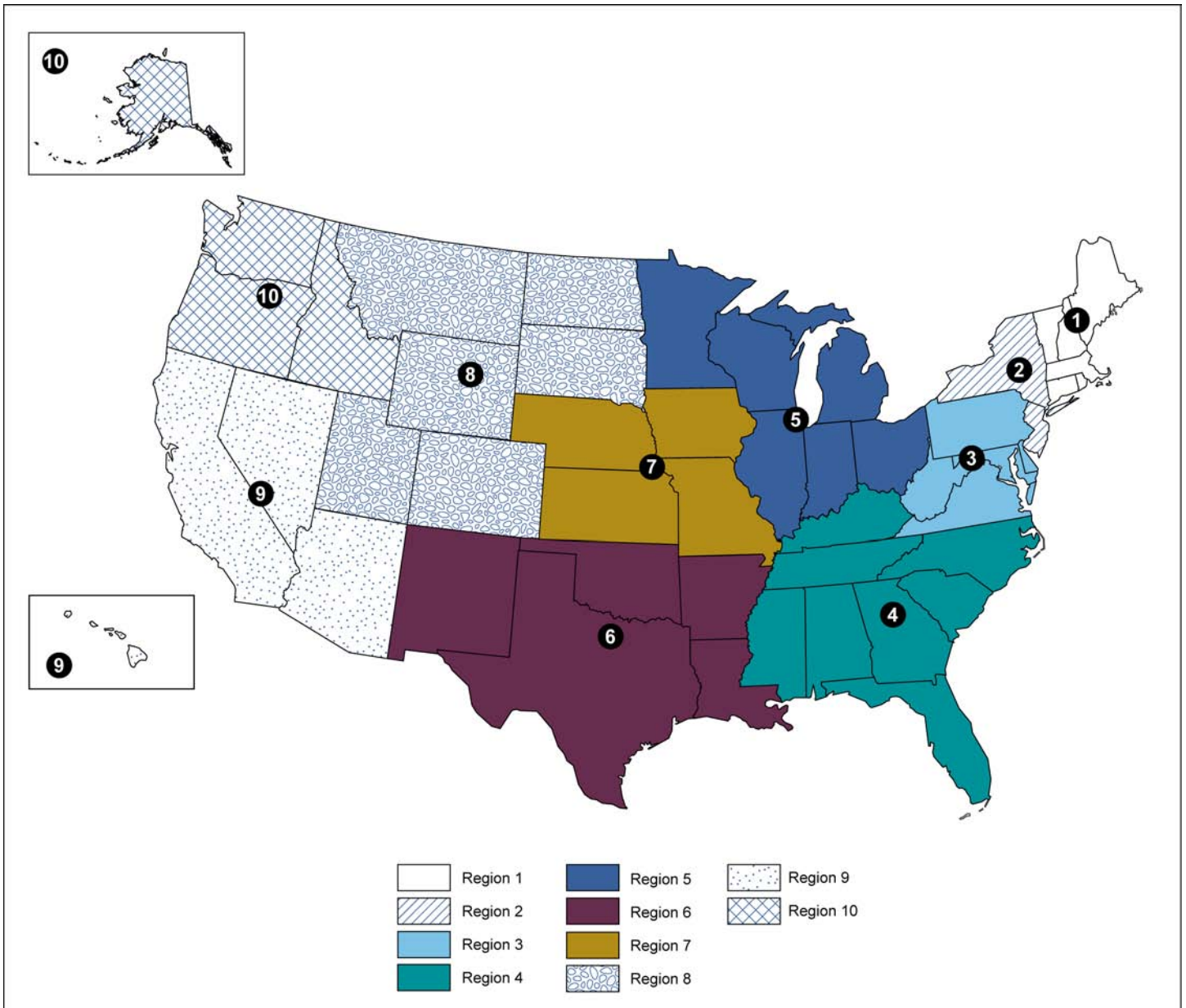
Background

This section discusses EPA's process for assessing sites under the Superfund program and the approaches identified by EPA for conducting long-term cleanups at sites eligible for the NPL under the Superfund program and under other available approaches.

EPA's Process for Assessing Sites under the Superfund Program

Under the Superfund program, EPA assesses hazardous waste sites for long-term cleanups through a specific process. At some point after a potential hazardous waste site is reported to the Superfund program and entered into CERCLIS, EPA regional officials, their contractors, or states acting under cooperative agreements with EPA evaluate the relative potential for a site to pose a threat to human health and the environment. EPA's 10 regional offices each are responsible for implementing Superfund within several states and, in some cases, territories. Under CERCLA, EPA may only pay for a remedial action at a site if the relevant state agrees, among other things, to pay a portion of the cleanup expenses, as well as all operations and maintenance costs. In addition, under a cooperative agreement with EPA, a state may assume the lead oversight role at a site in the Superfund program. Figure 1 shows the states included in each of the 10 EPA regions.

Figure 1: EPA's 10 Regions



Sources: GAO analysis of EPA information; Map Resources (map).

During the initial phases of the long-term cleanup process—known as preliminary assessment and site inspection—EPA regional officials or their counterparts evaluate the potential need for additional investigation

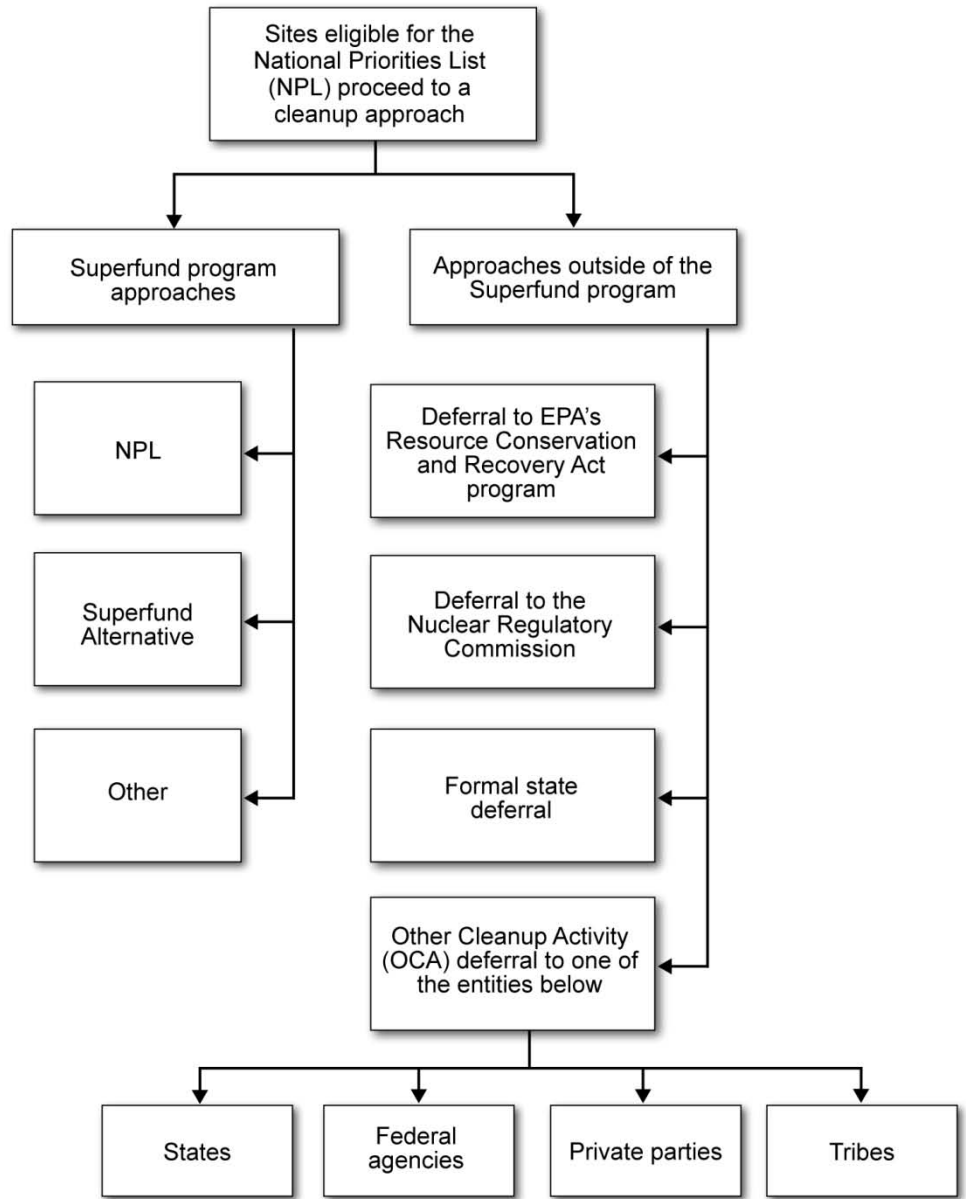
or action in connection with a release of hazardous substances from a site. Specifically, the preliminary assessment phase involves an evaluation of readily available information about a site and its surrounding area to determine if the release or potential release poses enough of a threat to human health and the environment that further investigation is needed. If further investigation is needed, a site inspection is performed. During this phase, investigators typically collect environmental and waste samples to determine what hazardous substances are present. Information collected during the preliminary assessment and site inspection is used to calculate and document a site's preliminary Hazard Ranking System score, which indicates a site's relative threat to human health and the environment based on potential pathways of contamination.¹⁰ Sites with a Hazard Ranking System score of 28.50 or greater are eligible for listing on the NPL. Information collected from the initial assessment phases to develop Hazard Ranking System scores is not intended to be sufficient to determine either the extent of contamination or how to clean up a particular site. After a site is determined to be eligible for the NPL, EPA chooses which long-term cleanup approach is best suited to the site. In some cases, EPA may conduct a short-term cleanup known as a removal action or otherwise delay selection of a long-term cleanup approach.

Approaches Identified by EPA for Conducting Long-Term Cleanups at Sites Eligible for the NPL

EPA may choose among several approaches to address sites with a relative threat to human health and the environment that is sufficiently severe to make them eligible for listing on the NPL. For long-term cleanups, EPA can retain oversight of sites under the Superfund program or defer the oversight of sites to other approaches, as shown in figure 2.

¹⁰These potential pathways of contamination include groundwater migration, surface water migration, soil exposure, and air migration.

Figure 2: Approaches Identified by EPA to Clean Up Sites Eligible for the NPL



Source: GAO analysis of EPA information.

Superfund Program Approaches for Conducting Long-Term Cleanups

Under its Superfund program, EPA conducts long-term cleanups using three approaches. The first and most common approach under the Superfund program involves listing a site on the NPL. To do so, EPA first proposes the site for listing on the NPL in the *Federal Register*. EPA then

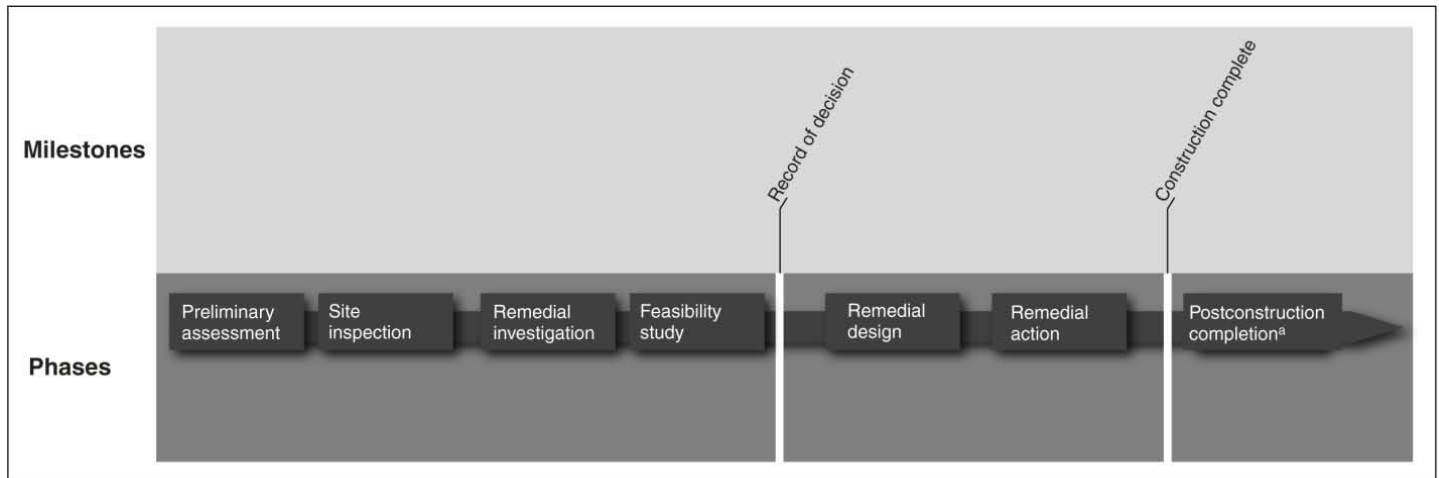
accepts public comments on the proposal and responds to the comments in a second and final *Federal Register* listing announcement of the site; then the agency may place on the NPL those sites that continue to meet the requirements for listing. The second approach that EPA may use under the Superfund program is the SA approach, which began informally in the 1990s whereby some EPA regions negotiated site cleanup agreements with PRPs for sites that PRPs, states, or local government officials and communities did not want to have listed on the NPL. To promote consistency across regions, EPA issued guidance in 2002 formalizing the SA approach, which it subsequently updated in 2004 and 2012.¹¹ According to EPA's guidance, to qualify for the SA approach, (1) a site's contamination must make it eligible for listing on the NPL; (2) EPA must anticipate a long-term cleanup at the site; and (3) there must be a willing, capable PRP who will negotiate and sign an agreement with EPA to perform the investigation or cleanup. The third approach EPA can use for long-term cleanup of sites is to address sites under the Superfund program but not list them on the NPL or address them through the SA approach.¹² These "Other" sites under the Superfund program can vary widely and include, among others, some sites with cleanup agreements that preceded the SA approach. Under these older agreements, for which there was no guidance at the time they were negotiated, EPA agreed not to list the site on the NPL, and the PRPs agreed to conduct the cleanup, according to EPA officials.

Irrespective of the approach chosen, all sites under the Superfund program approaches follow the same general phases for long-term cleanup, as shown in figure 3, and EPA officials oversee the cleanup at all of these Superfund sites.

¹¹EPA, *Response Selection and Enforcement Approach for Superfund Alternative Sites* (Washington, D.C.: June 24, 2002); EPA, *Revised Response Selection and Settlement Approach for Superfund Alternative Sites* (Washington, D.C.: June 17, 2004); and EPA, *Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach (SAA)* (Washington, D.C.: Sept. 28, 2012).

¹²For non-NPL sites, EPA does not have the option to perform a long-term cleanup itself and seek reimbursement from PRPs; however, EPA may enter into settlements with PRPs where applicable conditions for enforcement actions are met.

Figure 3: Long-Term Cleanup Process at Sites under the Superfund Program



Source: GAO analysis of EPA information.

Note: Phases of the long-term cleanup process may overlap, and multiple phases may be concurrently under way at a site.

³Postconstruction completion includes activities such as operation and maintenance, long-term response actions, and 5-year reviews, which ensure that Superfund cleanup actions provide for the long-term protection of human health and the environment.

After the initial phases of the long-term cleanup process, EPA or a PRP conducts a two-part study of the site: (1) a remedial investigation to further characterize site conditions and assess the risks to human health and the environment, among other actions, and (2) a feasibility study to evaluate various cleanup options to address the problems identified in the remedial investigation. At the conclusion of these studies, EPA selects a remedy for addressing the site’s contamination and develops a cost estimate for implementing the remedy; both of these are included in a record of decision. According to EPA officials, the level of cleanup depends on site-specific conditions, not the particular approach selected. EPA or a PRP then develops the method of implementation for the selected remedy during the remedial design phase and implements it during the remedial action phase, when actual cleanup of the site occurs. Multiple cleanup activities can occur within a given phase at the same or different operable units at one site. For example, one remedial action at an operable unit may address soil contamination, while another remedial action at the same operable unit may address groundwater contamination. When EPA or a PRP finishes the cleanup remedy at a site, all immediate threats have been addressed, and all long-term threats are under control, EPA generally considers the site to be “construction complete.” For sites listed on the NPL, when EPA, in consultation with the

state, determines that no further site response is appropriate, the agency may delete the site from the NPL. EPA reports achievements at NPL sites, including completion of some phases of the cleanup process, as part of the agency's implementation of provisions under the Government Performance and Results Act of 1993 (GPRA).¹³ The act requires federal agencies to develop strategic plans with outcome oriented agency goals and objectives, performance measures to track the progress made toward achieving goals, annual goals linked to achieving the long-term goals, and annual reports on the results achieved. EPA does not report publicly the same achievements for sites that are not on the NPL.

CERCLA provides EPA with authority to enter into agreements with PRPs to conduct cleanup actions at sites;¹⁴ this authority is relevant to all three approaches where EPA maintains oversight under the Superfund program. Model agreements for different phases of cleanup with standard provisions are to serve as the basis for negotiations and for the agency's legal documents. According to EPA officials, the agency typically uses legal documents known as "administrative orders on consent"—which do not require court approval—to record the agreements between EPA and PRPs for conducting remedial investigation and feasibility studies. An EPA agreement with a private party for conducting a remedial action generally takes the form of a "consent decree," which must be approved by a court.¹⁵ Although agreements under the SA approach generally follow these model agreements, EPA guidance states that SA agreements are to include specific provisions, depending on the phase of cleanup to which the agreement applies. These provisions are intended to ensure equivalency between the SA and NPL approaches. In addition to negotiating agreements, EPA has authority to issue enforcement orders, such as "unilateral administrative orders," or to coordinate with the

¹³The Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993), amended by the Government Performance and Results Act Modernization Act of 2010, Pub. L. No. 111-352, 124 Stat. 3866 (2011).

¹⁴CERCLA § 122(a), 42 U.S.C. § 9622(a) (2012).

¹⁵CERCLA § 122(d)(1)(A), 42 U.S.C. § 9622(d)(1)(A) (2012). EPA tracks separately the duration of negotiations for (1) remedial investigation and feasibility study agreements and (2) remedial design and remedial action agreements.

Approaches Outside of the Superfund Program for Conducting Long-Term Cleanups

Department of Justice in seeking an injunction to require PRPs to conduct cleanup.¹⁶

As an alternative to addressing a site under the Superfund program, EPA may defer oversight of the cleanup of a site eligible for the NPL to other cleanup approaches, including federal and state cleanup programs. For example, EPA may defer a site from its Superfund program to its Resource Conservation and Recovery Act (RCRA) program. Congress passed RCRA in 1976, establishing requirements, as well as giving EPA regulatory authority, for the generation, transportation, treatment, storage, and disposal of hazardous waste.¹⁷ While CERCLA focuses on cleanup of sites where hazardous substances have been released, including inactive and abandoned hazardous waste sites, RCRA generally focuses on facilities currently generating, treating, storing, and disposing of hazardous waste—hazardous materials that are destined for disposal or recycling. RCRA authorizes EPA to issue administrative cleanup orders where an imminent and substantial danger to health and the environment may exist. At a given site, certain authorities of CERCLA and RCRA may be applicable to a cleanup. EPA also may defer certain sites to the Nuclear Regulatory Commission (NRC). The NRC licenses commercial nuclear facilities, including power reactors, and regulates and oversees their safe operation, including the decommissioning and decontamination associated with shutting down a licensed reactor. In what are known as “formal state deferrals,” EPA may also defer sites to states or other entities, such as federally recognized tribes where applicable conditions are met. According to EPA guidance on this approach, the EPA region and the state cleanup program should enter into a memorandum of agreement certifying that the state has the necessary authority and capability to adequately supervise the PRP’s cleanup actions, among other things. The state will then oversee cleanup actions conducted and funded by the PRPs at the site. The quality of these cleanup actions should be substantially similar to a cleanup required under CERCLA authorities, according to EPA guidance on this approach. Under this

¹⁶CERCLA § 106(a), 42 U.S.C. § 9606(a) (2012).

¹⁷Pub. L. No. 94–580, 90 Stat. 2795 (1976) (codified as amended at 42 U.S.C. §§6901-6992k (2012)). Although RCRA amended the Solid Waste Disposal Act, Pub. L. No. 89–272, Title II, 79 Stat. 997 (1965), the amended law is nonetheless sometimes referred to as RCRA, a convention we follow here. Subtitle C of RCRA, 42 U.S.C. ch. 82, subch. III (§§ 6921-6939f), governs hazardous waste management. Hereinafter, references are to RCRA as amended.

formal state deferral approach, the EPA region still negotiates the level of oversight appropriate for the particular site.

EPA may also defer oversight of the long-term cleanup of a site eligible for the NPL through the Other Cleanup Activity (OCA) approach. OCA deferrals go to one of four types of entities (described below): states, federal agencies, tribes, or private parties.

- OCA deferral to a state places a site under that particular state's environmental regulations, as opposed to CERCLA authorities. In contrast to formal state deferrals, the OCA deferral to a state involves no formal EPA oversight other than periodic discussions between EPA regional officials and state officials. Since 2012, EPA guidance has indicated regions should have these discussions.
- OCA deferral to federal agencies places a site under that particular federal agency's oversight and authorities, according to EPA. Certain federal agencies, such as the Department of Defense, have responsibility and authority for some or all cleanups at their facilities.¹⁸ EPA assigns a status of "Other Cleanup Activity: Federal Facility Lead" to federal facilities that EPA tracks in its CERCLIS database and are being cleaned up outside of the NPL approach¹⁹ (these sites are eligible for listing but are not listed on the NPL). EPA periodically checks in with other federal agencies on the status of cleanup work at these sites.
- OCA deferral to a tribe places the site under that tribe's environmental regulations. EPA periodically checks in with tribal regulators on the status of cleanup work at these sites.
- OCA deferral to private parties applies to certain sites where the cleanup is conducted by a private party.

¹⁸See, e.g., 10 U.S.C. § 2701 (2012), giving DOD responsibility for environmental restoration at its facilities, among other things. See also Executive Order 12580, Superfund Implementation, 52 Fed. Reg. 2923 (Jan. 23, 1987). The executive order was issued in 1987 to respond to the Superfund Amendments and Reauthorization Act and delegates to EPA certain regulatory authorities that the statute assigns to the President, while delegating to the Departments of Defense and Energy authority for removal and remedial actions at their facilities, subject to certain provisions of CERCLA. This executive order generally gives other federal agencies authority for cleanups at non-NPL listed sites.

¹⁹Federal facility sites on the NPL are subject to certain additional requirements, see 42 U.S.C. § 9620(e) (2013).

EPA Defers Oversight of a Majority of Sites Eligible for the NPL to Approaches Outside of the Superfund Program

EPA most commonly addresses the cleanup of sites eligible for the NPL by “deferring” oversight to approaches outside of the Superfund program. EPA regions select the cleanup approach and defer oversight of more than half the sites eligible for the NPL to approaches outside of the Superfund program, primarily through OCA deferrals. Though OCA deferrals include the majority of NPL eligible sites, EPA’s guidance on this approach is less detailed than guidance on other approaches.

EPA Regions Exercise Discretion in Selecting the Cleanup Approach for Sites

EPA provides regions with discretion in selecting the cleanup approach for a given hazardous waste site. According to the *Superfund Program Implementation Manual*—which lists EPA’s Superfund program management priorities, procedures, and practices—each region is to select an appropriate cleanup approach after determining a site is eligible for the NPL. Officials in all 10 regions said that when they select cleanup approaches they attempt to use the most appropriate cleanup approach for a given site. For example, complex sites, such as contaminated waterways, may be more suited to the NPL approach than to deferral to a state cleanup program because EPA typically has more resources to oversee and manage such complex cleanups. Officials in four regions noted that states will sometimes request the NPL approach for large or complex sites.

EPA regions can establish their own processes for selecting a cleanup approach for a given site. Three of the 10 regions have some type of regional guidance related to their decision-making process. For example, Region 7 has guidance for its regional decision team that outlines the stakeholders within the region who will participate, when the team will meet, and how decisions are to be made at the meeting. Region 10 has guidance that focuses on how the region will prioritize sites that are eligible for the NPL. All of the regions may consult with relevant stakeholders across EPA programs about a given site, whether the regions have written guidance or not. These stakeholders might include staff from the office of regional counsel or the removal program. Five of the 10 regions use regional decision teams to evaluate sites that have been found eligible for the NPL and select which approach should be used to clean up the site. The other 5 regions do not use regional decision teams, opting instead for more informal decision-making processes or meetings on an as-needed basis. For example, in Region 5 there is a practice of coordinating between the region’s long-term cleanup and removal programs on sites that may be of interest to both programs.

EPA officials said the regions consider many potentially relevant factors to select the appropriate approach for each site. The major factors influencing regional officials' choice of cleanup approach at a site include the preferences of the state regarding how the site will be addressed and the existence of a PRP that is willing to and capable of addressing the site. Specifically, officials in all 10 regions highlighted state preference as a factor they consider. State preference can be particularly important because EPA has a policy of obtaining state concurrence before listing a site on the NPL. According to Region 5 officials, if a state opposes an NPL listing, they will typically give preference to other approaches, such as an OCA deferral to the state or the SA approach. In addition to state preference, officials in 9 of 10 regions said that the existence of a willing and capable PRP can be a factor in determining the cleanup approach. For example, a willing and capable PRP is necessary for the SA approach, which requires the PRP to conduct the cleanup under an agreement with EPA. EPA officials in one region said that the existence of a PRP can also be important for cleanups under state cleanup programs because states can have very limited funding to conduct cleanups on their own. State environmental officials from four states we contacted confirmed that they had limited or, in some cases, no state funding to conduct their own long-term cleanups.

Regional officials also identified other factors that can sometimes influence what cleanup approach the region will select. For example, officials in Region 5 noted that if the contamination presents an immediate threat to health and safety, they may use the Superfund removal program, which is more suited to a quick response than long-term cleanup approaches. Depending on the circumstances at a site, the removal program may be sufficient to deal with all of the contamination, or the site may need to be referred to a long-term cleanup approach for further work. Regional officials can also consider other relevant legal authorities that could apply to a site, such as RCRA. When a site is eligible for cleanup under both RCRA and Superfund, EPA policy

provides that the agency generally will defer the site to the RCRA program for cleanup.²⁰

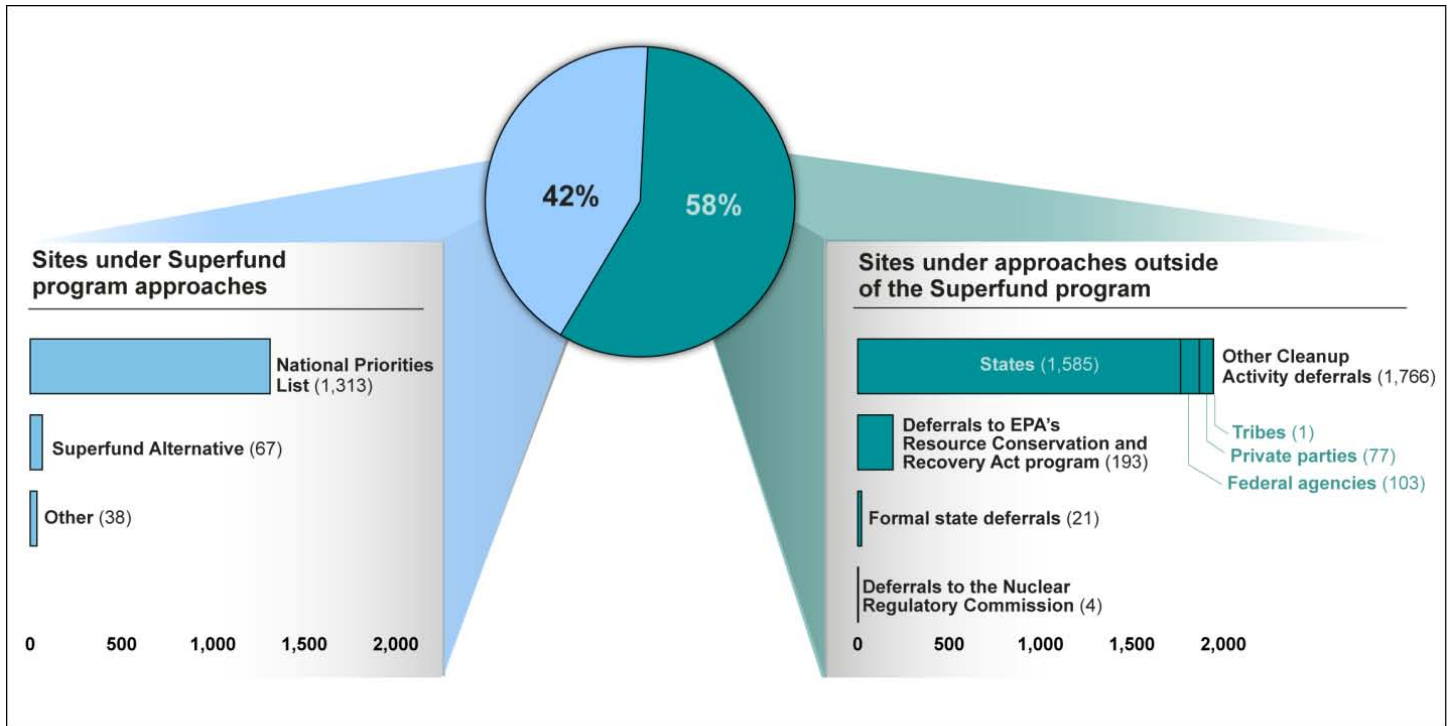
EPA Defers Oversight of More Than Half the Sites Eligible for the NPL to Approaches Outside of the Superfund Program

Among the 3,402 sites reported to the Superfund program in CERCLIS that EPA has identified as having contamination making them eligible for the NPL,²¹ EPA deferred 1,984 sites to cleanup approaches outside of the Superfund program (see fig. 4). Sites under the Superfund program make up the 1,418 sites that remain, with the vast majority of those sites being addressed through the NPL.

²⁰See 48 Fed. Reg. 40,658 (Sept. 8, 1983) (discussing original deferral policy), 60 Fed. Reg. 14,641 (Mar. 20, 1995) (providing explanation of deferral policy and revisions to RCRA policy), 54 Fed. Reg. 41,000 (Oct. 4, 1989) (discussing EPA development of its approach to RCRA deferral), 53 Fed. Reg. 23,978 (June 24, 1988) (discussing revisions to RCRA deferral). See also EPA Memorandum, Coordination between RCRA Corrective Action and Closure and CERCLA Site Activities (1996); and EPA, "NPL Deletion/Deferral Policy and RCRA Subtitle C Corrective Action," EPA: 540-R-95-002g (1995).

²¹We identified the approximately 3,400 sites based on whether the site was undergoing long-term cleanup. According to EPA officials, sites under each of the long-term cleanup approaches would have a Hazard Ranking System score of at least 28.50, otherwise the site would have been classified as "no further remedial action planned." These sites do not include sites that EPA has archived in CERCLIS.

Figure 4: Current Sites Identified as Eligible for the NPL Using Different Long-Term Cleanup Approaches, as of December 2012



Source: GAO analysis of EPA CERCLIS data.

Notes: Sites listed above only include sites that are currently active in CERCLIS and do not include sites that have been archived by EPA or sites where no further site response is required, such as sites deleted from the NPL.

EPA addresses more sites eligible for the NPL through the OCA deferral approach than any other cleanup approach: 1,766 of the 3,402 sites (52 percent). Moreover, because EPA deferred most of these 1,766 sites to states, OCA deferrals to states account for about 47 percent of all identified eligible sites.²² EPA regions' use of OCA deferrals to states ranges widely, from 7 sites in each of three regions (6, 7, and 8) to 470 sites in Region 1 (see app. II for a breakdown of cleanup approaches by

²²States also oversee cleanup at an undetermined additional number of sites that may be eligible for the NPL but are not listed in CERCLIS. States are not obligated to report all potentially eligible sites to the Superfund program, and environmental officials in several states confirmed that they have conducted or overseen cleanups at sites not listed in CERCLIS that may have been eligible for the NPL.

region). According to officials in Region 1, states in the region have mature environmental programs willing and capable of overseeing many sites, which makes the OCA deferral to states well suited to that region. In contrast, officials we spoke to in some regions noted that they needed to consider states' capacity to oversee a site before using the OCA deferral to states. Nine states have no OCA deferrals, and other states oversee hundreds of these sites, with the most in Massachusetts (247 sites), New Jersey (221), and California (180). Environmental officials in several states we contacted confirmed that states' use of and experience with OCA deferrals can differ substantially. One state official noted that these differences are likely related to how industrialized a state may be and the extent of cleanup programs in a given state. OCA deferrals to federal agencies, private parties, and American Indian tribes account for an additional 181 sites. OCA deferrals to federal agencies primarily involve military sites: 76 percent of these deferrals were to the Army, Navy, or Air Force. In addition, a majority of OCA deferrals to private parties come from Florida where, on the basis of a state law, PRPs can conduct cleanup without any formal agreement or order from the state, according to Region 4 officials. PRPs conducting such cleanups must submit regular reports to the state on their progress, and the state reserves the right to take the PRP to court, if necessary.

EPA currently addresses 1,418 sites (42 percent of those identified as eligible for listing on the NPL) through approaches under the Superfund program—most commonly, through listing the sites on the NPL. Specifically, sites listed on the NPL account for 1,313 sites, over 90 percent of sites under the Superfund program.²³ According to officials in one region, EPA has access to more resources than states and typically addresses sites that require greater or more specialized resources through the NPL approach. For example, regional officials noted, states face different limitations that can prevent them from pursuing cleanup under their programs including: technical capacity, legal resources, and financial resources. In addition, EPA officials in four regions noted examples where a state environmental program requested that the Superfund program pursue NPL listing because the state was having trouble getting a PRP to cooperate or the PRP went bankrupt.

²³NPL sites do not include sites that have been deleted from the NPL.

In addition to listing sites on the NPL, EPA also oversees the long-term cleanup of sites through two other approaches under the Superfund program. First, the Superfund program currently oversees 67 sites under the SA approach.²⁴ Second, EPA oversees at least 38 other sites with long-term cleanups under the Superfund program for which EPA has no documented definition and no consistently applied method of counting. EPA officials provided different estimates of the number of such sites. One EPA official provided a method to identify these sites based on a code in CERCLIS, which resulted in the 38 sites listed above. However, another EPA official provided us a list of 35 such sites that had reached the remedial action phase. Of these 35 sites, 12 matched the 38 sites identified by the code in CERCLIS. In addition, 16 of the sites on the list of 35 had a code of “status undetermined” or had no code at all. EPA regional officials also identified other specific sites under the Superfund program, but some of those sites could not be identified by the code in CERCLIS, were not on the list of 35, or had no code at all. As of December 2012, 270 sites had the “status undetermined” code, and 101 had no such code in CERCLIS, making it impossible to determine the exact number of sites that EPA oversees under the Superfund program that are not being addressed under either the NPL or SA approaches. Tracking of these sites is discussed later in this report.

EPA addressed the remaining sites eligible for the NPL through different deferral approaches, primarily through deferrals to the RCRA program. Specifically, deferrals to the RCRA program account for 193 of these remaining sites (89 percent).²⁵ Aside from these deferrals to the RCRA program and a few deferrals to NRC, EPA deferred 21 sites to state programs using the formal state deferral approach in 4 of its 10 regions. EPA officials said that the OCA deferral to states approach has largely replaced the formal state deferral approach, and EPA does not anticipate using the formal deferral approach much in the future.

²⁴EPA has had SA agreements at 70 sites in total; 3 of these sites have switched from the SA approach to the NPL approach.

²⁵EPA officials said the Superfund program had deferred 10 sites to the RCRA program in the last 5 years, and that deferrals from the RCRA program to the Superfund program probably have been more common recently, because of business bankruptcies. Active hazardous waste treatment, storage, or disposal facilities at which contamination has occurred may be eligible to be cleaned up as corrective actions in the RCRA program. These cleanups are generally the responsibility of the party owning or operating the permitted facility. If the party goes bankrupt, the party may be unable to complete the RCRA corrective action.

EPA Has Less Detailed Guidance for OCA Deferrals Than for Other Less Commonly Used Deferral Approaches

As discussed above, EPA addresses more sites through OCA deferrals than any other approach but has less guidance to define this approach or how deferral decisions should be documented than for its other deferral approaches. Unlike OCA deferrals, EPA has guidance or other documents outlining the process for deferrals to the RCRA program, deferrals to the NRC, and formal state deferrals. These documents clearly define or provide mechanisms to define the roles of the Superfund program and the entity that will conduct oversight at the site. For example, guidance for the formal state deferral approach specifies that the EPA region and the state should enter into a memorandum of agreement in which they clarify mutual expectations for their interaction and each party's responsibilities at deferred sites.²⁶ After the deferral, the region continues to review the state's progress and conduct any other activities required by its individual agreements with the state in each case.²⁷

In contrast, EPA has not issued guidance focused on OCA deferrals that clearly defines the different types of OCA deferrals or what detail would be sufficient or appropriate to support its decisions at these sites. Instead, EPA describes OCA deferrals in the *Superfund Program Implementation Manual* (which is updated annually). EPA recently added to its instructions in the manual regarding sites with OCA deferrals. Specifically, in its 2012 version of the manual, EPA added more language explaining that there is to be no continuous and substantive involvement on EPA's part while cleanup work is ongoing at OCA deferral sites. In addition, in this version of the manual, EPA added an instruction for regions to check on the status of OCA sites periodically. Officials in EPA regions noted that they use different approaches for tracking OCA sites; for example, for an OCA deferral to states, EPA regions' tracking activities range from checking state websites to meeting with states to receive status updates every 3 months. Officials in some regions noted that they will need to modify their processes to meet this new instruction.

²⁶EPA Office of Solid Waste and Emergency Response, *Guidance on Deferral of NPL Listing Determinations While States Oversee Response Actions*, EPA/540/F-95/002 (Washington, D.C.: May 1995), 4.

²⁷CERCLA also establishes requirements related to formal state deferrals; see 42 U.S.C. § 9605(h) (2012).

Even with EPA's additions to the manual, the available instruction does not clearly define each type of OCA deferral, particularly OCA deferrals to private parties, which has resulted in inconsistent identification of those OCA deferrals by different regions. While the manual defines OCA deferrals generally, it does not define each type of OCA deferral. When asked to define OCA deferrals to private parties, Superfund program officials in headquarters referred us to EPA regional officials for more information, and officials in 6 of 10 EPA regions were unsure about how to define OCA deferrals to private parties or how they should be used.²⁸ Moreover, officials in another 6 regions confirmed that some sites identified as OCA deferrals to private parties in CERCLIS should have been identified as OCA deferrals to states. Without clearer guidance defining the different OCA deferrals, EPA cannot be reasonably assured that it is consistently tracking its OCA deferral sites in CERCLIS, which can make it difficult to identify what entity is responsible for conducting oversight at the site.

In addition, the manual instructs regions to track OCA deferrals and completion of cleanups at these sites but does not clearly specify the documentation required to support these actions. The manual provides overarching program management priorities, procedures, and practices for the Superfund program. For OCA deferrals, the manual explains how EPA regions should identify the deferral date of an OCA site and the date of completion of cleanup at that site,²⁹ but it provides little detail on what type of documentation would be acceptable to support these determinations. For example, according to the manual, the deferral date of a site entered into CERCLIS is supposed to be "supported by existing documentation," described as "documentation between EPA and the non-EPA party leading the cleanup," with no further detail of what documentation would be appropriate or sufficient. In addition, the instruction for entering the date for completion of the cleanup refers to required documentation, without further clarification about what documentation is needed from the entities conducting oversight. Regional officials told us that, in practice, the amount and type of documentation

²⁸All six of these regions had at least one site identified as an OCA deferral to private parties.

²⁹The completion of cleanup date at an OCA deferral site is the date of the determination that cleanup was successfully completed, that cleanup was not necessary, or that the other entity will not complete cleanup and the site will be referred back to the Superfund program.

regions collect to support OCA deferrals covers a broad range, including no written documentation, an e-mail from a state official, letters from state officials attesting to the cleanup, or a copy of the legal order or agreement between the state and PRP. Similarly, regions relied on different forms of documentation, including various e-mails, letters, or reports from state officials to document the completion of cleanup at OCA deferral sites. Officials in three regions reported that there was no consistent standard for documentation within their region. Moreover, Region 9 officials noted that the region had not tracked the completion of cleanups at OCA deferrals in CERCLIS in the past and may have no documentation for some of its older OCA deferral sites. Without guidance that details the documentation needed to support regions' OCA deferral decisions, EPA cannot be reasonably assured that its regions' documentation will be appropriate or sufficient to verify that these sites have been deferred or have completed cleanup. EPA officials noted they were working on additional guidance for OCA deferrals. However, these officials said that development of the guidance was in the planning stage; therefore, a draft of this guidance, detailed information on what will be included in the guidance, or a planned issuance date for the guidance, were not yet available.

EPA provides the least detailed guidance for the small number of sites that are undergoing long-term cleanup under the Superfund program outside of the SA and NPL approaches. Such sites do not have specific guidance at the program level, regional level, or a section in the *Superfund Program Implementation Manual* describing how they should be defined or tracked. In contrast, EPA has developed instructions in the manual for how to track sites cleaned up under the SA approach. EPA also has guidance for the NPL approach, such as how the agency should propose, list, and delete sites from the NPL. EPA officials noted that sites that are cleaned up under the other Superfund program approach often involve unique situations, making it difficult to establish any guidance that would cover all possible situations. For example, one of these sites is using a hybrid approach under both RCRA and CERCLA authorities, according to an EPA official. However, in 10 cases, regional officials described these sites as standard cleanups under CERCLA authority that used standard procedures. While there are unique and standard cases among sites being cleaned up under the other Superfund program approach (i.e., outside of the SA and NPL approaches), EPA officials could not provide a reliable estimate of these other sites because the agency has no consistently applied method for counting them. Without a method to identify and track such sites, EPA headquarters has no way to determine the extent to which regions use this approach or evaluate

regions' use of this approach. As a result, it will be difficult for EPA headquarters to hold regions accountable for using the approach.

Processes for Implementing the SA and NPL Approaches Differ in a Few Significant Ways

The processes for implementing the SA and NPL approaches have similarities, but also several differences, some of which EPA has accounted for through specific provisions in its agreements with PRPs at SA agreement sites. However, some sites may not benefit from EPA's efforts to account for these differences. Furthermore, the agency's tracking and reporting of SA agreement sites differs significantly from its tracking and reporting of NPL sites. Using the SA approach at sites has certain potential advantages for EPA and some PRPs and states, but communities' views on this approach are mixed.

The SA and NPL Processes Are Similar in Many Ways and EPA Has Accounted for Some Differences Between Them

The processes for implementing the SA and NPL approaches have many similarities. According to the agency's SA guidance, at its SA agreement sites, EPA is to generally act in accordance with the practices normally followed at sites listed on the NPL. For example, according to EPA guidance, SA agreement and NPL sites should follow the same investigation and cleanup processes, including the phases and milestones of long-term cleanups shown earlier in figure 3. EPA regions should also use the same response techniques, standards, and guidance for SA agreement sites as they do for NPL sites. According to EPA's guidance, SA agreements should eventually achieve cleanup levels that are comparable to those required at NPL sites. EPA regions should also take steps to ensure equivalency between the SA and NPL approaches in the absence of NPL listing.

Despite these similarities, there are certain differences in the overall processes and EPA's authority under the NPL and SA approaches. Through specific provisions in its SA agreements with PRPs, EPA has sought to make the two approaches comparable by accounting for the following four key differences:

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- First, EPA has the authority to pay for remedial actions only at sites listed on the NPL.³⁰ To account for this difference, SA agreements include a provision to help ensure cleanups are not delayed by a loss of funding if the PRP ceases work during the remedial action phase of cleanup. Specifically, this provision requires the PRP to obtain a readily available source of funds that the agency can use if it needs to take over the cleanup work. EPA can use those funds to continue the work while the agency lists the site on the NPL, if necessary.
 - Second, EPA is authorized to provide technical assistance grants that help communities participate in decision making only at sites that are listed or proposed for listing on the NPL. An initial grant of up to \$50,000 is available to qualified community groups so they can contract with independent advisors to help the community understand technical information about the site. EPA includes a provision in SA agreements to help ensure that a community's opportunity to receive technical assistance at an SA agreement site is comparable to that at an NPL site. This provision requires the PRPs, with EPA oversight, to administer and fund a technical assistance plan, under which a qualified community group can receive up to \$50,000 for the same purposes as a technical assistance grant from EPA.
 - Third, if a PRP were to clean up an SA agreement site to the extent that it no longer scored at least 28.50 on the Hazard Ranking System, according to EPA, it might lose the option of listing the site on the NPL, a concern that is not present when a site is listed on the NPL. To prevent this, SA agreements state that the PRP will not challenge listing the site on the NPL if a partial cleanup of the site results in changed site conditions. EPA officials noted that this provision gives the agency assurance that it can step in and clean up the site under the NPL approach if the PRP were to default on the SA agreement.
 - Fourth, CERCLA states that an action for natural resource damages (NRD) at NPL sites must start within 3 years after completion of the remedial action.³¹ This period is longer than the general statute of limitations for NRD claims, which states that an action must start

³⁰Specifically, CERCLA established a trust fund from which EPA receives annual appropriations for Superfund program activities. Superfund trust funds are available for long-term cleanups only at sites on the NPL. EPA may use these funds for investigation and removal actions at any nonfederal site. EPA also can seek reimbursement from the PRPs after incurring these costs.

³¹NRD claims are made for injury to, destruction of, or loss of natural resources. CERCLA defines natural resources broadly to include land, fish, wildlife, groundwater, and other resources belonging to or managed by federal or other governmental entities.

within 3 years after the discovery of the loss and its connection with the contamination. SA agreements contain a provision that clarifies that the longer statute of limitations for NPL sites also applies to SA agreement sites.

Even with EPA's efforts to achieve equivalence of SA agreement and NPL sites through these provisions, some sites may not benefit from these efforts because EPA regions have entered into agreements with PRPs at sites that they said were likely eligible for the SA approach without following the SA guidance. Agreements at such sites may not, for example, ensure that a community has access to funds to pay for technical assistance or that remedial action can continue if a PRP stops cooperating. Officials from some EPA regions told us they have continued to enter into agreements with PRPs since 2002 without following the SA guidance. We identified six sites where this has occurred as follows:

- In Region 7, officials entered into an agreement with a PRP to conduct remedial design and remedial action at a site. Regional officials stated that the SA approach, which can be suggested for a site by the PRP or the region, never came up during their discussions with the PRP.
- In Region 10, officials stated that the agreements they had entered into with PRPs at five sites might qualify for the SA approach but that, at the time they entered into the agreements, the officials had not focused on whether the agreements met the SA criteria; rather, they were focused on obtaining enforceable agreements.

According to EPA headquarters officials, if regions are going to conduct a long-term cleanup under the Superfund program at a site, but not list it on the NPL, the agency prefers regions to use the SA approach. EPA headquarters officials said that they believed this preference was implicit in the agency's SA guidance and stated they discussed this preference with regional officials at periodic meetings; however, they also acknowledged that this preference is not stated explicitly anywhere in guidance for the regions. If regions continue to enter into agreements for some sites without following the SA guidance, these sites may be denied some of the advantages built into the SA agreements to ensure that the cleanups will be comparable to those under the NPL approach.

EPA's Tracking and Reporting of Certain Aspects of the Process under the SA Approach Differ Significantly from That under the NPL Approach

Some differences remain between the way EPA tracks sites under the SA and NPL approaches. In CERCLIS, EPA tracks sites' status in relation to the NPL regardless of any changes in cleanup approach. Specifically, sites that have been proposed for listing on the NPL, are currently on the NPL, have been deleted from the NPL, or have been removed from proposal can always be identified as such in CERCLIS, which allows EPA to accurately identify sites that are or have been on the NPL. In contrast, EPA cannot similarly track an SA agreement site as such if it is subsequently listed on the NPL.³² Specifically, EPA currently tracks SA agreement sites through a single database code identifying only that a site has an SA agreement, and the identifying code is not maintained in the database if the site is later added to the NPL. The agency has not clarified in its guidance when to leave this SA identifying code in place, and when to remove it, even though the EPA IG recommended in a 2007 report that EPA develop specific instructions on when to use the SA designation and update the *Superfund Program Implementation Manual* (which is updated annually) to incorporate these instructions.³³ According to the IG report, these instructions should specify that the SA code should not be removed even if the site is cleaned up or proposed for the NPL, so that controls over documentation of sites with SA agreements can be maintained. As the EPA IG pointed out, absence of guidance can result in poor quality data on the SA universe. While EPA indicated in 2010 that it would implement this recommendation,³⁴ the 2012 manual does not include any instructions about maintaining the SA code. Because EPA has not implemented the IG's recommendation, the manner in which the agency tracks the identity of SA agreement sites in CERCLIS is incomplete. For example, while an EPA website identifies all sites that have or have had SA agreements, three sites that had SA agreements and were later added to the NPL cannot be identified in CERCLIS as having had SA agreements. As a result, all sites that have had SA agreements are not identifiable in CERCLIS, which may hamper EPA's

³²Under certain circumstances—for example, if EPA determines that a PRP that has entered into an SA agreement for a site is not adequately fulfilling the requirements of the agreement—EPA may decide to list the site on the NPL.

³³EPA IG, *EPA Needs to Take More Action in Implementing Alternative Approaches to Superfund Cleanups*, 2007-P-00026 (Washington, D.C.: June 6, 2007).

³⁴EPA Office of Enforcement and Compliance Assurance, "Certification to Close OIG Audit Report, 'EPA Needs to Take More Action in Implementing Alternative Approaches to Superfund Cleanups'" (Washington, D.C.: Aug. 30, 2010).

ability to effectively manage long-term cleanups and track outcomes at SA agreement sites.

Furthermore, the standards for specifying what documentation is sufficient to support the Hazard Ranking System score of SA agreement sites are less clear than those for NPL sites. When sites are proposed for listing on the NPL, EPA procedure requires they have a Hazard Ranking System documentation record—a specific document that includes detailed justification for the Hazard Ranking System score. In contrast, both the 2004 and 2012 SA guidance state that EPA should have “adequate documentation” supporting a Hazard Ranking System score of 28.50 or higher but do not define what is meant by “adequate” documentation or provide criteria for assessing adequacy. The guidance documents specify that regions may rely on a draft Hazard Ranking System documentation record or “other adequate documentation,” but do not provide an explanation of what other documentation might be adequate. EPA headquarters officials told us that documentation of a preliminary calculation of the Hazard Ranking System score during the initial assessment phases would qualify as adequate, and said that this has been discussed with regional officials during periodic meetings. EPA officials acknowledged, however, that this interpretation of the guidance has not been included in any written guidance to the regions. As the EPA IG pointed out in its 2007 report, consistent and reliable documentation of Hazard Ranking System scores at SA agreement sites is an internal control to ensure compliance with the SA guidance and approach.³⁵ Under the federal standards of internal control, agencies are to clearly put in writing (i.e., in management directives, administrative policies, or operating manuals) internal controls, such as this interpretation of the guidance, and have them readily available for examination.³⁶ Without more specific written guidance, EPA regional officials may not develop adequate documentation of Hazard Ranking System scores at SA agreement sites.

In addition to the differences in its tracking, EPA has not reported the agency’s performance on the progress of cleanup at SA agreement sites as it has for NPL sites. EPA reports achievements at NPL sites, including

³⁵EPA IG, *EPA Needs to Take More Action*, 6.

³⁶GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (Washington, D.C.: November 1999).

completion of some phases of the cleanup process, as part of the agency's implementation of provisions under GPRA, which generally aims to hold federal agencies accountable for using resources wisely and achieving program results. Two of the Superfund program's three GPRA performance measures—sites where human exposure is under control and sites that are ready for their anticipated use—refer only to NPL sites. One additional performance measure tracks the completion of the initial assessment phases, which generally precede EPA's decision about which cleanup approach to use at a site, including the SA or NPL approach. EPA's Office of Solid Waste and Emergency Response, which manages the Superfund program, reports these performance measures for NPL sites in several annual reports available on EPA's website.³⁷ However, EPA does not include in these reports the cleanup milestones reached at SA agreement sites, such as how many SA sites have human exposure under control. The EPA IG recommended in 2007 that EPA track and report the same GPRA performance measures at SA agreement sites as it does at NPL sites.³⁸ As the IG reported, by measuring and tracking all performance measures at SA agreement sites, EPA could demonstrate the outcomes of the Superfund program's work and provide an incentive to regions by more thoroughly accounting for their performance. In 2010, EPA indicated that it would implement the IG's 2007 recommendation to track and report all Superfund GPRA performance measures at SA agreement sites using an annual report.³⁹ EPA officials noted that the agency has begun tracking Superfund performance measures for SA agreement sites, but they acknowledged that EPA is not reporting these results publicly. Until the agency reports performance information on the progress of cleanup at SA agreement sites as it does for NPL sites, EPA is not providing the public and Congress with a full picture of SA agreement sites. Without such information, Congress lacks complete information on the progress of the Superfund program to inform its legislative actions, including appropriations.

³⁷See, for example, EPA, *The Office of Solid Waste and Emergency Response, Fiscal Year 2010 End of the Year Report* (Washington, D.C.). Available at <http://www.epa.gov/superfund/accomplishments.htm>. Accessed March 22, 2013.

³⁸EPA IG, *EPA Needs to Take More Action*, 10.

³⁹EPA Office of Enforcement and Compliance Assurance, "Certification to Close OIG Audit Report," 2.

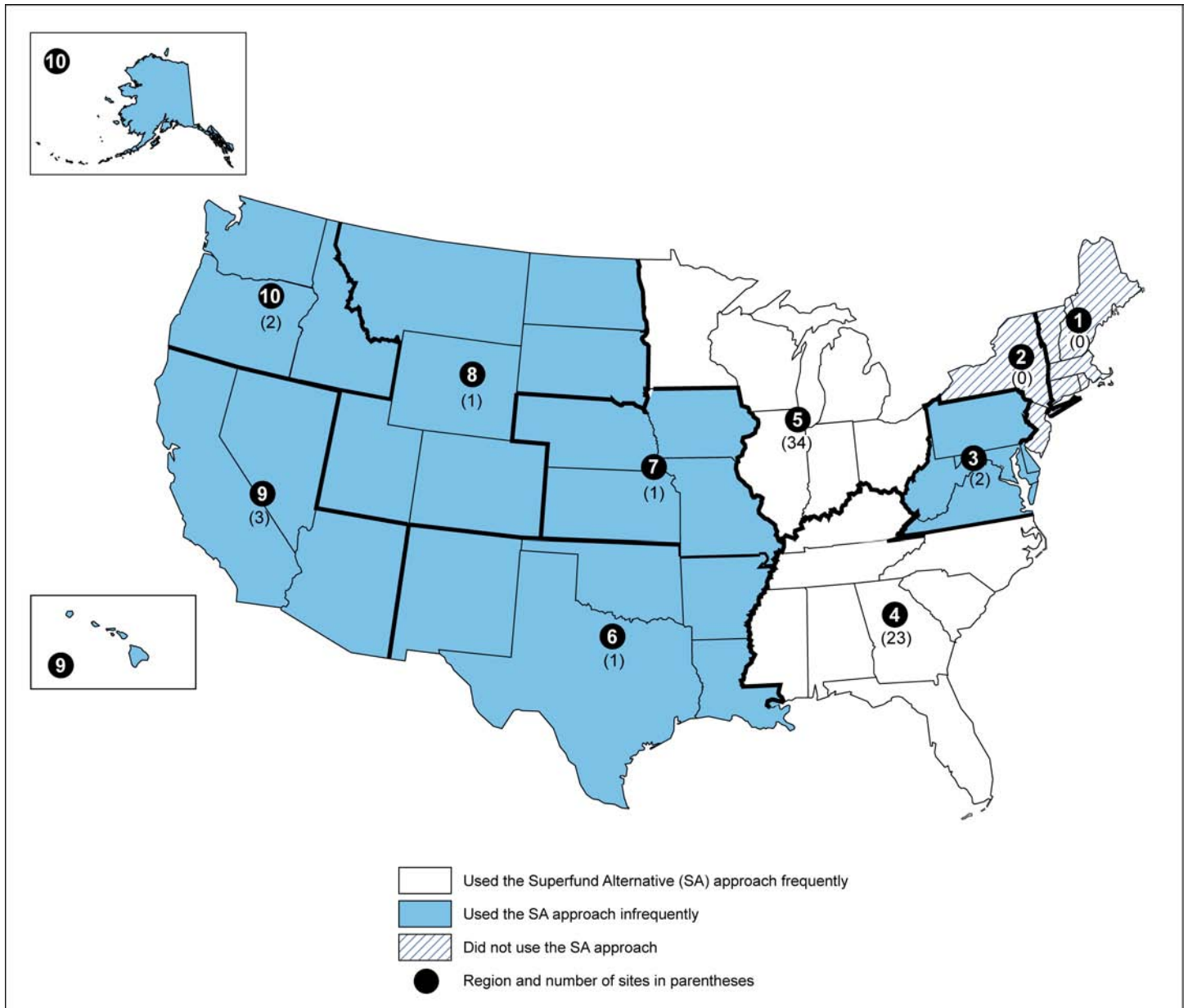
The SA Approach Has Potential Advantages for EPA, Some PRPs, and States, but Communities' Views on its Benefits Are Mixed

Using the SA or the NPL approach can have advantages or disadvantages for the parties involved, including EPA, PRPs, states, and communities. Specifically, using the SA approach generally allows EPA to avoid at least some of the cost and time associated with listing a site on the NPL. For example, NPL listing requires preparation of a Hazard Ranking System documentation record, which is not required for sites with SA agreements.⁴⁰ EPA officials estimated each such record costs an average of about \$65,000 to prepare. In addition, when EPA decides to propose a site for listing on the NPL, the agency sometimes conducts an expanded site inspection if further information is necessary to document a Hazard Ranking System score. EPA officials estimated this step costs about \$92,000 on average. In addition, to list a site on the NPL, EPA has to work through the formal listing process, including issuing notices in the *Federal Register* with a public comment period. This process takes time to complete, which may affect the progress at the site. In Region 3, EPA officials stated that the volume of comments received on a particular site proposed for the NPL, in addition to the likelihood of litigation from one or more parties if the site were finalized on the NPL, led the region to address the site through the SA approach.

Some EPA regions have seen the advantages of using the SA approach more than others. As shown in figure 5, of the 67 SA agreement sites, 57 sites, or 85 percent, are in EPA Regions 4 and 5.

⁴⁰Region 4 prepares a draft Hazard Ranking System documentation record for SA agreement sites because the region wants the site to be ready for listing on the NPL, if necessary. In addition, in some cases, sites were already proposed to the NPL when the SA agreement was entered, negating any savings from avoiding this step.

Figure 5: Number of SA Agreement Sites by EPA Region, as of December 2012



Sources: GAO analysis of EPA data; Map Resources (map).

Differences in usage of the SA approach among regions relate to a region’s specific circumstances and preferences. According to EPA headquarters officials, Regions 4 and 5 had early experience with SA

agreements and may have been more comfortable in starting new ones as a result. These two regions have also listed many sites to the NPL since the SA approach was formalized in 2002. Region 4 officials told us that they have found that the SA approach is best suited to sites with one or two PRPs and no questions about the PRPs' liability or ability to conduct the investigation or cleanup. They said they have also found that it is helpful when a PRP has a financial interest in finishing the cleanup quickly, as in the case of a potential redevelopment project at a site. Other regions have used the SA approach in limited circumstances. For example, officials in Region 9 described one case in which they pursued the SA approach because the state did not want a particular site listed on the NPL. Two regions—Regions 1 and 2—have never used the SA approach. Officials in Region 1 explained that few sites that have willing and capable PRPs and are eligible for the NPL come to the region's attention because state programs prefer to take on oversight of such sites. Region 2 officials said they did not see a reason to use the SA approach—if a site's contamination is severe enough, the region will propose the site to the NPL, unless the state is addressing the site.

Using the SA approach allows PRPs to avoid the perceived stigma associated with an NPL site, according to EPA officials. Sites with SA agreements have to meet all of the qualifications of NPL sites, and thus may have contamination that is just as severe, but the potential stigma of NPL listing appears to influence PRPs. Officials in 7 of 10 regions mentioned the stigma of an NPL site as a concern for PRPs. Concerns about this stigma may also arise when a company is to be sold and does not want to list an NPL site as part of its liabilities, according to EPA regional officials. Related to this stigma, EPA officials said they believed that avoiding listing on the NPL may help local government officials and PRPs in some cases, such as facilitating a site's redevelopment or its financing. Previous reports have also pointed to the potential stigma of NPL listing as motivation for pursuing a different cleanup approach.⁴¹ For example, an assessment of the effectiveness of the SA approach in Region 4 (hereafter referred to as the Region 4 study) found that sites

⁴¹See, for example, EPA, "Superfund Alternative Approach Baseline Assessment" (Washington, D.C.: Apr. 14, 2011); GAO, *Superfund: Greater EPA Enforcement and Reporting Are Needed to Enhance Cleanup at DOD Sites*, [GAO-09-278](#) (Washington, D.C.: Mar. 13, 2009); Industrial Economics Incorporated, *Effectiveness Assessment of the Region 4 Superfund Alternative Approach*, a report prepared for the EPA, November 2010.

using the SA approach may have a higher potential for redevelopment than comparable NPL sites if avoiding this stigma increases PRPs' financing options and their willingness to redevelop.⁴²

In addition, some states generally prefer that EPA not list sites on the NPL, according to EPA officials, which makes the SA approach more appealing. According to EPA policy, EPA typically obtains a state's concurrence before listing a site on the NPL. Officials in all 10 EPA regions mentioned the states' views as one of the factors they used to determine whether to pursue an NPL listing or other approaches. Moreover, officials in 4 of 10 regions said there were states in their region that were generally reluctant to have EPA list sites on the NPL. For example, Region 9 officials said two of their states generally do not want EPA to list sites on the NPL; specifically, one of these states wanted to avoid the associated stigma of having NPL sites in the state.

The SA approach also has advantages and disadvantages for communities. According to an EPA official, it may be easier for communities to obtain technical assistance funds from PRPs at SA agreement sites than to obtain the equivalent funds from EPA at NPL sites. This official said obtaining funds from PRPs at SA agreement sites often involved the absence of a "match" requirement as well as fewer paperwork requirements for the communities because the technical assistance plans do not have to follow federal grant requirements. However, under the SA approach, communities have no opportunity for a formal comment process on EPA's selection of the SA approach itself, as they do under the NPL approach. Specifically, when EPA proposes a site for the NPL in the *Federal Register*, the public has 60 days to comment on the proposed listing. EPA then responds in writing to significant public comments in conjunction with the final *Federal Register* listing announcement of the site. No such opportunity exists when EPA decides to enter into an SA agreement at a site, although EPA provides numerous opportunities under the SA approach for communities to comment on the cleanup process.

Communities also may have mixed reactions to the SA approach for other reasons as well. According to EPA officials, communities may have concerns about the SA approach and may require outreach from the

⁴²Industrial Economics Incorporated, *Effectiveness Assessment*, ES-7.

agency to explain the approach. For example, at one site in Region 5, the region expanded its outreach efforts after some community members protested the use of the SA approach at the site. A regional official explained that some individuals in the community believed the site would not follow the same cleanup process as an NPL site. Some community members may support listing on the NPL over the SA approach to bring increased attention to a site, helping to ensure its cleanup. Other regional officials said other community members may be more open to the SA approach and oppose listing on the NPL for fear of its effect on property values. The Region 4 study confirmed that the SA approach is often considered advantageous by community members and leaders concerned about property values and stigma.⁴³ However, this report also found that other community members require confirmation that the process will not result in more limited resources or reduced remediation compared to listing on the NPL.

SA Agreement Sites Showed Mixed Results in Completing the Cleanup Process When Compared with Similar NPL Sites

For sites with agreements from June 2002 through December 2012, SA agreement sites and similar NPL sites we selected showed mixed results in the time needed to complete negotiations for agreements, specific cleanup activities, and achieving the construction completion milestone (see app. I for more details on our objectives, scope, and methodology and app. III for more information on our results). Specifically, SA agreement and NPL sites in our analysis showed mixed results in the average time to complete negotiations with PRPs and for specific cleanup activities, such as remedial investigation and feasibility studies, remedial designs, and remedial actions. In addition, a lower proportion of SA agreement sites have reached construction completion compared with similar NPL sites. SA agreement sites tend to be in earlier phases of the cleanup process because the SA approach began more recently than the NPL approach.

For agreements finalized from June 2002 through December 2012 at sites in our analysis, SA agreement and similar NPL sites showed mixed results in the length of time to complete negotiations, with SA agreement sites taking about as long as similar NPL sites for remedial investigation and feasibility study negotiations and less time for remedial design and remedial action negotiations. EPA regional officials confirmed that

⁴³Industrial Economics Incorporated, *Effectiveness Assessment*, ES-8.

negotiations can be faster at SA agreement sites because the PRPs are more cooperative. For example, Region 4 officials highlighted one SA agreement site where the PRP pushed for a quicker negotiation process by turning in documents ahead of deadlines, unlike many other PRPs. In another case, Region 5 officials said they negotiated three SA agreements for remedial investigations and feasibility studies covering 19 sites of a similar nature with the same PRP. Region 5 officials noted that these negotiations were particularly smooth and cooperative. Moreover, the Region 4 study also found, based on interviews with PRPs and EPA officials, that the tone of SA negotiations is more productive than at NPL sites.⁴⁴ However, given the relatively limited number of negotiations for both NPL and SA agreement sites in our analysis, the differences in the average length of negotiations cannot be attributed entirely to the type of approach used at each site.

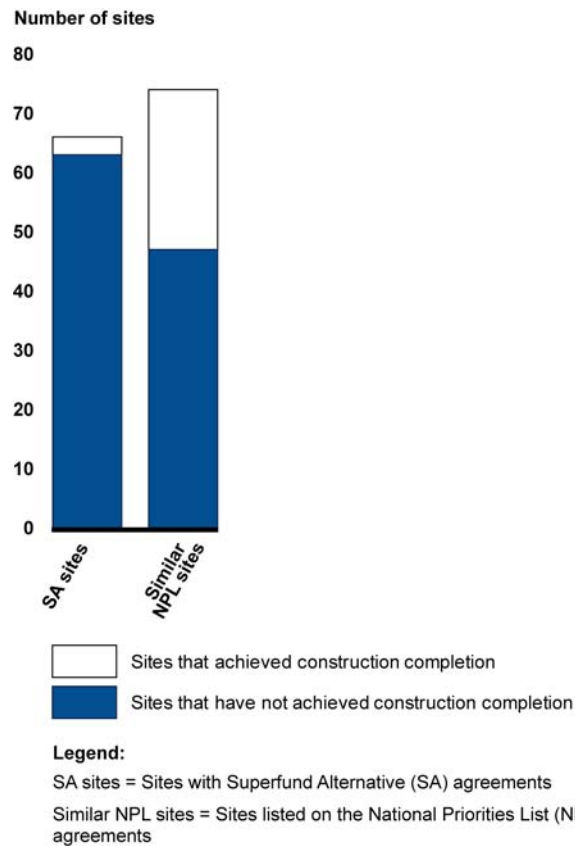
The SA agreement and similar NPL sites in our analysis showed mixed results in the length of time it took to complete specific cleanup activities,⁴⁵ with SA agreement sites taking substantially longer for remedial investigations and feasibility studies on average and about the same time for remedial designs and remedial actions. While SA agreement sites took substantially longer on average than NPL sites to complete remedial investigations and feasibility studies, these differences do not appear to be exclusively attributable to the SA and NPL approaches. For example, several remedial investigations and feasibility studies at SA agreement sites took a long time to complete due to individual circumstances at the site, such as dealing with a proposal to sell on-site materials to a manufacturing company, late participation from PRPs in the process, or coordination with other cleanup efforts. SA agreement sites and NPL sites in our analysis took about the same time on average to complete remedial designs and remedial actions.

A lower proportion of SA agreement sites have reached construction completion compared with similar NPL sites in our analysis (see fig. 6).

⁴⁴Industrial Economics Incorporated, *Effectiveness Assessment*, ES-9.

⁴⁵Multiple cleanup activities can occur within a given phase at the same or different operable units at one site. Completion of one cleanup activity, such as a remedial investigation and feasibility study, does not necessarily mean all work in that phase has been completed. Our analysis looks at individual activities within given phases.

Figure 6: Construction Completions at SA Sites and Similar NPL Sites



Source: GAO analysis of EPA data.

We selected NPL sites for our analysis that had agreements put in place between EPA and PRPs from June 2002 through December 2012, as SA agreement sites do. According to EPA officials, however, because the SA approach began in 2002, and the NPL approach was initially authorized in 1980, more SA agreement sites began cleanup later than NPL sites and, therefore, are in earlier phases of the cleanup process. For example, 23 percent of the sites in our NPL comparison group have ongoing remedial investigations and feasibility studies—a phase that precedes selection of the remedy and remedial action—while almost 60 percent of SA agreement sites are in this phase. Since EPA began implementing the NPL approach over 30 years ago, there were more sites ready to negotiate agreements during the period of our analysis for later phases in the cleanup process, which lead to construction completions.

Conclusions

EPA regional officials are responsible for choosing the appropriate long-term cleanup approach for sites with contamination that makes them eligible for the NPL. To do so, they select from among several approaches, including deferring responsibility for the oversight of site cleanup outside of the Superfund program. Of these sites deferred outside of the Superfund program, EPA has deferred about 1,800 sites through OCA deferrals—more sites than any other approach—but the agency has not issued guidance focused on this long-term cleanup approach. Instead, EPA describes OCA deferrals in the *Superfund Program Implementation Manual*, which does not clearly define each type of OCA deferral, particularly OCA deferrals to private parties. This has led to inconsistent coding of OCA deferrals in CERCLIS by different regions. Moreover, EPA’s guidance does not specify in detail the documentation regions should have to support their decisions on OCA deferrals or completion of cleanup at these sites. As a result, EPA regions collected varying types and amounts of documentation—including, in some cases, no documentation—to support OCA deferrals. EPA officials noted they were currently working on additional guidance for OCA deferrals, but they had not set an issuance date for this guidance. Without clearer guidance on OCA deferrals, EPA does not have reasonable assurance that it can consistently track its OCA deferral sites in CERCLIS or that its regions’ documentation will be appropriate or sufficient to verify that these sites have been deferred or have completed cleanup. In addition, EPA officials could not provide a reliable estimate regarding the number of sites with long-term cleanups under the Superfund program that are being cleaned up through approaches other than the NPL and SA approaches—the “other” Superfund program sites—because there is no consistently applied method for tracking them. While the agency’s estimates of the number of such sites is relatively small, without a method to identify and track such sites, it is difficult for EPA headquarters to determine the extent to which regions use this other approach under the Superfund program, evaluate regions’ use of this approach, or hold regions accountable for using this approach.

Furthermore, EPA guidance has made clear since 2002 that the agency should try to make SA agreement sites equivalent to NPL sites in terms of the level of cleanup achieved, among other things. EPA has largely accomplished this through adherence to the Superfund cleanup process and by adding certain provisions to SA agreements to address key differences between the NPL and SA approaches. The agency has not clarified to regions in its guidance that the SA approach is the preferred approach for long-term cleanup of sites under the Superfund program not listed on the NPL. Without clear guidance, agreements at such sites may

be denied some of the advantages built into the SA agreements to ensure that the cleanups will be comparable to those under the NPL approach. Also, while EPA accurately identifies NPL sites in CERCLIS, the agency cannot do the same for SA agreement sites because it has not clarified in writing when the database code that identifies sites with SA agreements should remain in place and when it should be removed. In addition, EPA's standards for specifying what documentation is sufficient to support the Hazard Ranking System score at SA agreement sites are less clear than those for NPL sites. Unless EPA improves its tracking of SA agreement sites and clarifies its policies, its ability to effectively track outcomes of the SA approach at these sites and manage long-term cleanups at sites under the Superfund program may be hampered. Finally, while EPA reports performance information for NPL sites under GPRA, it does not report performance information on the progress of cleanup at SA agreement sites in an equivalent manner. Without such information on SA agreement sites, Congress lacks complete information on the progress of the Superfund program to inform its legislative actions, including appropriations.

Recommendations for Executive Action

To improve the Superfund program's management of sites with contamination that makes them eligible for the NPL, including management of the SA approach and deferrals of cleanup oversight to other entities, we recommend that the Administrator of EPA take the following four actions:

- Provide guidance to EPA regions that defines each type of OCA deferral and what constitutes adequate documentation for OCA deferral and completion of cleanup.
- Develop a method for EPA headquarters to identify and track other sites with long-term cleanups under the Superfund program (i.e., those that are outside of the NPL and SA approaches).
- Update EPA's written policies on SA agreement sites, including taking steps such as clarifying whether the SA approach is EPA's preferred approach for long-term cleanup of sites under the Superfund program and outside of the NPL, specifying what documentation is sufficient to support the Hazard Ranking System score at SA agreement sites, and defining when the database code that identifies sites with SA agreements should remain in place.
- Report performance information on the progress of cleanup at SA agreement sites in a manner that is equivalent to such reporting for NPL sites.

Agency Comments and Our Evaluation

We provided a draft of this report to EPA for review and comment. In written comments, which are included in appendix IV, EPA agreed with the report's recommendations and stated that it believes the report contains substantial useful information. Regarding the first recommendation, EPA stated that it added more detail on OCA tracking in its fiscal year 2012 *Superfund Program Implementation Manual*, but it acknowledged that more guidance is needed. Regarding the second recommendation, EPA stated that it agreed with the recommendation without further comment. Regarding the third recommendation, EPA said that it will clarify that the SA approach is generally the agency's preferred enforcement approach for CERCLA non-NPL sites that are "NPL-caliber," where feasible and appropriate. Finally, regarding the fourth recommendation, EPA stated that it agrees with this recommendation as it pertains to reporting under GPRA and provided further information on how EPA reports measures at SA agreement sites. EPA also provided technical comments on the draft report, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Administrator of the Environmental Protection Agency, the appropriate congressional committees, and other interested parties. In addition, the report will also be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact me at (202) 512-3841 or trimbled@gao.gov. Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix V.



David C. Trimble
Director, Natural Resources and Environment

Appendix I: Objectives, Scope, and Methodology

This appendix provides information on the scope of the work and the methodology used to examine (1) how the Environmental Protection Agency (EPA) addresses the cleanup of sites it has identified as eligible for the National Priorities List (NPL), (2) how the processes for implementing the Superfund Alternative (SA) and NPL approaches compare, and (3) how SA agreement sites compare with similar NPL sites in completing the cleanup process.

To examine how EPA addresses the cleanup of hazardous waste sites with a level of contamination that makes them eligible for the NPL, we analyzed applicable federal statutes and EPA regulations and guidance to determine the available approaches to address sites that are reported to the Superfund program. We then obtained and analyzed data from EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), the Superfund program's database, as of December 2012. Specifically, we analyzed EPA's CERCLIS database to determine how many sites EPA currently classified as undergoing long-term cleanup under each approach, both nationally and by each of EPA's 10 regions.¹ According to EPA officials, sites under each of the long-term cleanup approaches would have a Hazard Ranking System score of at least 28.50, otherwise the site would have been classified as "no further remedial action planned." Thus, all sites identified as being under a long-term cleanup approach were considered to have contamination making them eligible for the NPL. This analysis involved the review of EPA's non-NPL status code, NPL status code, and SA code. In addition, we conducted semistructured interviews with officials in all 10 EPA regions to understand each region's processes for selecting among long-term cleanup approaches and why regions used the various approaches. We also obtained relevant supporting documentation from these regional officials. In addition, we interviewed EPA headquarters officials about the assessment process and cleanup approaches. Finally, we interviewed a nonprobability, convenience sample of officials from 13 state cleanup programs who were familiar with available cleanup approaches. The convenience sample consisted of representatives from state environmental departments taking part in an Association of State and Territorial Solid Waste Management Officials conference call who agreed to speak with us. Because this was a nonprobability sample, the results of

¹We only reported information from CERCLIS's active inventory of sites, as opposed to the archived inventory. EPA archives sites when no further interest exists at the site under the federal Superfund program based on available information.

our analysis cannot be generalized to all states; however, these officials provided important information about the cleanup process.

To compare the processes for implementing the SA and NPL approaches, including the cleanup process and EPA's oversight, we analyzed available documentation on the two approaches, including guidance and prior reviews. These reviews included an EPA Inspector General (IG) report on the SA approach, as well as several reports on the approach by EPA. We reviewed key findings and recommendations from the IG's report, as well as the evidence provided by EPA to demonstrate its implementation of the report's recommendations. We found the evidence to be sufficient to assess whether EPA had implemented these recommendations. In addition, we interviewed officials in all 10 EPA regions to determine how each region implemented the SA approach and obtained relevant supporting documentation. Finally, we interviewed EPA headquarters officials knowledgeable about the SA approach.

To compare how SA agreement sites and similar NPL sites complete the cleanup process, we identified SA agreement sites and constructed a comparison group of 74 NPL sites with agreements between EPA and potentially responsible parties (PRP) similar to those at SA agreement sites as follows:

- We identified 67 SA agreement sites using the SA code and added to that 3 SA agreement sites with their SA code removed after the site was listed on the NPL for a total of 70 SA agreement sites; we identified these three sites through our interviews with EPA officials. We then obtained data on the legal actions taken at these sites from EPA officials in the Office of Site Remediation Enforcement, which included all agreements at these sites. Based on discussions with EPA officials and the SA guidance, we isolated agreements at SA agreement sites by selecting: (1) agreements entered into between June 2002 (the date of the issuance of the first SA guidance) and December 2012; (2) administrative orders on consent or consent decrees; and (3) agreements involving a PRP-led combined remedial investigation and feasibility study, remedial design, or remedial action. After excluding four sites with SA codes that had SA agreements that

were not relevant to our study, we had 66 SA agreement sites for our analysis.²

- We constructed our comparison group of 74 NPL sites starting with the approximately 1,300 sites on the NPL. Specifically, we identified the 702 sites with (1) a combined remedial investigation and feasibility study, (2) remedial design, or (3) remedial action led by a PRP. We requested data on the legal actions taken at these sites from EPA officials and identified agreements similar to SA agreements based on the date the agreement was entered into, the type of agreement, and whether it included PRP-led long-term cleanup actions. In addition, we dropped any NPL sites from Regions 1 and 2 from the analysis because neither region has used the SA approach.

To more precisely align the NPL comparison group with SA agreement sites, we analyzed, for SA agreements, the number of PRPs involved and estimated costs for PRP-led actions. According to EPA officials, SA agreement sites generally tend to have fewer PRPs. Based on this analysis and EPA's comments, we established thresholds for different variables that agreements in our NPL comparison group could not exceed. Specifically, NPL agreements could have: (1) no more than seven PRPs involved and (2) administrative orders on consent with estimated values between \$100,000 and \$5,000,000 or consent decrees with estimated values between \$125,000 and \$30,000,000.³ These ranges covered the vast majority of SA agreements.

After we identified the NPL sites with agreements similar to SA agreement sites, we merged the data on the legal actions with cleanup action data for NPL and SA agreement sites. We kept (1) combined remedial investigation and feasibility studies, (2) remedial designs, and

²We excluded four SA agreement sites that did not have relevant agreements involving a PRP-led combined remedial investigation and feasibility study, remedial design, or remedial action. First, one agreement involved EPA's use of a special account where the PRP funded the initial remedial investigation work based on the understanding that the PRP would conduct remedial action. Second, another site's SA agreement involved a PRP-led removal action and no SA agreement for remedial investigation and feasibility study, remedial design, or remedial action. Third, one SA agreement site had no legal action data. Finally, at one SA agreement site, the PRP began conducting cleanup activity before establishing an SA agreement with EPA.

³We analyzed administrative orders on consent and consent decrees separately because consent decrees are used for remedial actions which can have higher costs than the activities under an administrative order on consent.

(3) remedial actions at sites if the action was explicitly listed as a remedy in an SA agreement or an SA-similar agreement (for NPL sites). We identified negotiations related to cleanup actions of interest by comparing the completion date of the negotiation with the completion date of the agreement in EPA's legal action data. For remedial investigation and feasibility study negotiations, we kept any negotiation with a completion date up to 180 days before the date of an administrative order on consent for that site. For remedial design and remedial action negotiations, we kept any negotiation with a completion date up to 2 years before the date of a consent decree.⁴ After keeping these cleanup actions of interest, we computed the durations of specific cleanup activities by calculating the difference in months between the start and completion dates of identified actions included in CERCLIS. We then calculated the mean and median durations for the SA and NPL groups, as well as related ranges. We compared the means and medians of the durations to assess whether reported results are affected by a possible skewed distribution. We decided to report the median because it is less sensitive to extreme values and provides a better estimate of the "average" duration for this analysis. Because only three SA agreement sites had reached the construction completion milestone, we were unable to compare the groups across the entire cleanup process; instead, we compared completion of specific activities, such as remedial designs. The results of our analysis cannot be generalized to all NPL sites because the 74 sites were a subset of all NPL sites selected to be as similar as possible to SA agreement sites based on key characteristics related to cleanup durations such as having a PRP that agreed to conduct at least some part of the cleanup. The comparison group was created for purposes of assessing whether alternative approaches for addressing the long-term cleanup of hazardous waste sites under the Superfund program can make a difference in cleanup durations and not for making generalizations about the larger universe of all NPL sites.

We conducted additional analyses on our SA and NPL groups to determine if there were any unaccounted distributional differences within each group that would materially affect our results. Specifically, we examined the sensitivity of our results to differences in regional

⁴Consent decrees, which are used for remedial actions, must be approved by a court. Due to this requirement, there can be delays between completion of negotiations and the decree becoming official, so we included agreements with completed consent decrees within 2 years of the end of the negotiation.

distribution because the SA approach has different regional usage patterns than the NPL approach. While 85 percent of SA agreement sites are in Regions 4 and 5, only 34 percent of the similar NPL sites are in Regions 4 and 5. In one analysis, we restricted SA agreement and similar NPL sites to Regions 4 and 5, and the results were generally similar to the analysis using the full set of SA agreement and similar NPL sites.⁵ In addition, we examined the sensitivity of our results to differences in the complexity of SA agreement sites and similar NPL sites measured through the distribution of megasites⁶ and single operable unit sites in each group. The results for length of negotiations were not sensitive to differences between SA agreement sites and similar NPL sites in the distribution of megasites, though the results for the length of cleanup activities were somewhat sensitive to distributional differences.⁷ The results for length of negotiation and cleanup durations were, in general, not sensitive to differences in the distribution of sites with one or more operable units.

To assess the reliability of the data from EPA's CERCLIS database used in this report, we analyzed related documentation, examined the data for errors or inconsistencies, and interviewed agency officials about any known data problems and to learn more about their procedures for maintaining the data. Where there were discrepancies in the data, we worked with EPA officials to clarify. For example, we identified certain SA agreement sites that did not appear to have agreements with long-term cleanup actions and reviewed these with EPA officials. Miscoded data were corrected, and EPA officials provided explanations for unique

⁵The one exception involved remedial actions, with NPL comparison sites taking 20 months longer, on average, to complete remedial actions than their SA agreement site counterparts in our regional analysis restricted to regions 4 and 5. However, this comparison involved only a small number of NPL sites since Regions 4 and 5 only contain around one-third of the complete set of NPL comparison sites used in our analysis.

⁶Generally, a site is considered to be a megasite if the combined extramural, actual and planned, removal, and remedial action costs incurred by Superfund or by PRPs are greater than \$50 million. The megasite designation may be applied to any federal or non-federal facility NPL or non-NPL site.

⁷While the duration of cleanup activities was somewhat sensitive to the distribution of megasites, it was not always in the expected direction. For example, SA agreement sites in which megasites were excluded took longer on average to complete remedial action activities than the entire SA group. In contrast, NPL comparison sites in which megasites were not included took less time, on average, to complete remedial investigation and feasibility study activities than the entire set of NPL comparison sites.

circumstances with certain agreements. We determined the data to be sufficiently reliable for calculating durations for completing different cleanup activities, including negotiations, at SA and NPL sites.

We conducted this performance audit from November 2011 to April 2013 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.

Appendix II: Long-Term Cleanup Approaches by EPA Region

Tables 1 and 2 provide a breakdown of cleanup approaches by region. Table 1 shows the number of sites within each region that are being cleaned up under the various cleanup approaches. Table 2 shows each region's percentage of the total number of sites cleaned up under each approach.

Table 1: Number of Sites by Region and Long-Term Cleanup Approach, as of December 2012

Region	NPL	SA	Other sites under Superfund program	OCA deferral to states	OCA deferral to federal agencies	OCA deferral to private parties	OCA deferral to tribes	Deferral to EPA's RCRA program	Formal state deferrals	Deferral to the NRC	Total
1	100	0	0	470	4	1	0	2	0	0	577
2	215	0	8	247	5	0	0	5	0	0	480
3	170	2	1	119	22	5	0	23	0	2	344
4	185	23	11	289	7	55	0	71	5	0	646
5	244	34	3	111	22	5	0	13	0	0	432
6	90	1	0	7	0	3	0	20	0	0	121
7	68	1	2	7	0	0	0	7	8	1	94
8	53	1	1	7	1	6	0	11	1	1	82
9	113	3	1	222	37	1	1	40	0	0	418
10	75	2	11	106	5	1	0	1	7	0	208
Total	1,313	67	38	1,585	103	77	1	193	21	4	3,402

Source: GAO analysis of EPA data.

Notes: Sites listed above only include sites that are currently active in CERCLIS and do not include sites that have been archived by EPA or sites where no further site response is required, such as sites deleted from the NPL.

**Appendix II: Long-Term Cleanup Approaches
by EPA Region**

Table 2: Percentage of Sites by Region and Long-Term Cleanup Approach, as of December 2012

Region	NPL	SA	Other sites under Superfund program	OCA deferral to states	OCA deferral to federal agencies	OCA deferral to private parties	OCA deferral to tribes	Deferral to EPA's RCRA program	Formal state deferrals	Deferral to the NRC	Total
1	8%	0%	0%	30%	4%	1%	0%	1%	0%	0%	17%
2	16%	0%	21%	16%	5%	0%	0%	3%	0%	0%	14%
3	13%	3%	3%	8%	21%	6%	0%	12%	0%	50%	10%
4	14%	34%	29%	18%	7%	71%	0%	37%	24%	0%	19%
5	19%	51%	8%	7%	21%	6%	0%	7%	0%	0%	13%
6	7%	1%	0%	0%	0%	4%	0%	10%	0%	0%	4%
7	5%	1%	5%	0%	0%	0%	0%	4%	38%	25%	3%
8	4%	1%	3%	0%	1%	8%	0%	6%	5%	25%	2%
9	9%	4%	3%	14%	36%	1%	100%	21%	0%	0%	12%
10	6%	3%	29%	7%	5%	1%	0%	1%	33%	0%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: GAO analysis of EPA data.

Notes: Percentages may not add up to 100 because of rounding. Sites listed above only include sites that are currently active in CERCLIS and do not include sites that have been archived by EPA or sites where no further site response is required, such as sites deleted from the NPL.

Appendix III: Data Analysis of SA Agreement Sites and Similar NPL Sites

In this appendix, we discuss the results of our analysis of the median length of negotiations and the median length of cleanup activities at SA agreement sites and similar NPL sites, which consisted of NPL sites with agreements similar to SA agreements. Appendix I includes more information on our methodology.

Median Length of Negotiations at SA Agreement Sites and Similar NPL Sites

As shown in table 3, for agreements with PRPs finalized from June 2002 through December 2012, SA agreement sites and similar NPL sites in our analysis showed mixed results in the length of time to complete negotiations, with SA agreement sites taking about as long as similar NPL sites for remedial investigation and feasibility study negotiations and less time for remedial design and remedial action negotiations.

Table 3: Median Length of Negotiations in Months for Agreements between EPA and PRPs at 66 SA Agreement Sites and 74 Similar NPL Sites for Agreements Finalized from June 2002 through December 2012

	Median length of negotiations in months		Number of negotiations for agreements between EPA and PRPs ^a	
	SA	NPL	SA ^c	NPL
Cleanup activities involved in negotiations ^b				
Remedial investigation and feasibility study	7 ^d	8	29	13
Remedial design and remedial action	9	14	21	47

Source: GAO analysis of EPA data.

Note: Our analysis included 66 SA agreement sites that had relevant cleanup actions. Some other SA agreement sites were excluded from the analysis because of having agreements that were not relevant to our work.

^aSites can have more than one of each type of negotiation so the numbers of negotiations in the table do not always reflect the number of sites.

^bEPA tracks negotiations for combined remedial investigation and feasibility study, as well as combined remedial design and remedial action in its CERCLIS database as they are defined in the *Superfund Program Implementation Manual*.

^cIn some cases at SA agreement sites, EPA did not record negotiations in CERCLIS, such as when a PRP approached EPA to begin negotiations. This occurred with two different negotiations in the SA group: one negotiation for a multisite agreement covering 11 sites and another negotiation for a multisite agreement covering 2 sites.

^dAt six SA agreement sites, EPA and the PRP negotiated a single multisite agreement that took about 3 months. However, EPA recorded a 3-month negotiation at each of the six sites in CERCLIS, which may overstate the median for the SA agreement sites in our analysis. These six sites are the only case of bundled negotiations with recorded negotiations in CERCLIS for the sites in our analysis.

Given the relatively limited number of negotiations for both NPL and SA agreement sites in our analysis and the effect of unique sites, the differences in the median length of negotiations cannot be attributed entirely to the type of approach used at each site. Unique conditions at each site have the potential to affect negotiations between EPA and the PRP beyond the cleanup approach selected.

Median Length of Cleanup Activities at SA Agreement Sites and Similar NPL Sites

As shown in table 4, the SA agreement sites and similar NPL sites in our analysis showed mixed results in the length of time it took to complete specific cleanup activities,¹ with SA agreement sites taking longer for remedial investigations and feasibility studies on average and about the same time for remedial designs and remedial actions on average.

Table 4: Median Length of Cleanup Activities for 66 SA Agreement Sites and 74 Similar NPL Sites Completed from June 2002 through December 2012

Cleanup activities ^a	Median number of months to complete a cleanup activity		Number of cleanup activities	
	SA	NPL	SA	NPL
Remedial investigation and feasibility study	69	50	14	5
Remedial design	20	22	9	20
Remedial action	31	30	6	35

Source: GAO analysis of EPA data.

Note: Our analysis included 66 SA agreement sites that had relevant cleanup actions. Some other SA agreement sites were excluded from the analysis because of having agreements that were not relevant to our work.

^aSites can experience more than one cleanup activity in a given phase, so the number of activities listed under each approach in the table does not always reflect the number of sites in our analysis.

Twelve of the 14 remedial investigations and feasibility studies at SA sites took longer than 50 months to complete, which is greater than the median for NPL sites in our analysis, as well as the median of 51 estimated by EPA for PRP-led remedial investigation and feasibility studies that began after June 2002. However, given the relatively small number of cleanup activities for both NPL and SA agreement sites in our analysis and differences at the site level, the differences in the median length of cleanup activities cannot be attributed entirely to the type of approach used at each site. For example, several remedial investigations and feasibility studies at SA sites took a long time to complete due to individual circumstances at the site, such as dealing with a proposal to sell on-site materials to a manufacturing company, late participation from PRPs in the process, or coordination with other cleanup efforts. SA agreement sites and NPL sites in our analysis took slightly less than 2

¹Multiple cleanup activities can occur within a given phase at the same or different operable units at one site. Completion of a cleanup activity, such as a remedial action, does not necessarily mean the site has completed the entire phase.

years on average to complete remedial designs and slightly less than 3 years on average to complete remedial actions.

Appendix IV: Comments from the Environmental Protection Agency



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 10 2013

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

Mr. Alfredo Gomez
Acting Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Gomez:

Thank you for the opportunity to review and comment on GAO's draft report, "Superfund: EPA Should Take Steps to Improve Its Management of Alternatives to Placing Sites on the National Priorities List" (GAO-13-252). The purpose of this letter is to provide the EPA's comments on this draft report. The EPA appreciates the GAO's work on this subject area and your collegial working relationship and dialogue with our staff. The EPA generally agrees with the GAO's findings, conclusions, and recommendations and is providing technical comments we believe will improve accuracy and clarity of the final report.

The draft report examines current non-National Priorities List (NPL) approaches being used to address sites determined by the Superfund remedial site assessment program to need long-term remedial cleanup attention. The draft report focuses on sites addressed through the EPA's Superfund Alternative Agreement Approach, sites deferred or referred to other cleanup programs such as state programs, and other approaches. The GAO recommends the EPA improve guidance on selecting and tracking non-NPL cleanup approaches and report progress on sites using the Superfund Alternative Approach in a manner that is equivalent to how the EPA reports progress at NPL sites.

GAO Recommendation #1

Provide guidance to EPA regions that defines each type of Other Cleanup Activity (OCA) deferral and what constitutes adequate documentation for OCA deferral and completion of cleanup.

EPA Response

EPA agrees with this recommendation. EPA added more detail on OCA tracking in its FY2012 Superfund Program Implementation Manual but acknowledges more guidance is needed.

GAO Recommendation #2

Develop a method for EPA headquarters to identify and track other sites with long-term cleanups under the Superfund program (i.e., those that are outside of the NPL and SA approaches).

EPA Response

EPA agrees with this recommendation.

**Appendix IV: Comments from the
Environmental Protection Agency**

GAO Recommendation #3

Update EPA's written policies on SA agreement sites, including taking steps such as clarifying whether the SA approach is EPA's preferred approach for long-term cleanup of sites under the Superfund program and outside of the NPL, specifying what documentation is sufficient to support the Hazard Ranking System score at SA agreement sites, and defining when the database code that identifies sites with SA agreements should remain in place.

EPA Response

EPA agrees with this recommendation and will clarify that the SAA is generally the Agency's preferred enforcement approach for CERCLA non-NPL sites that are NPL-caliber, where feasible and appropriate.

GAO Recommendation #4

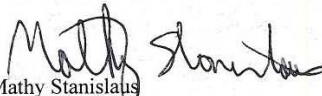
Report performance information on the progress of cleanup at SA agreement sites in a manner that is equivalent to such reporting for NPL sites.

EPA Response

EPA agrees with this recommendation as it pertains to reporting under the Government Performance Results Act (GPRA). Please see EPA's technical comments for recommended revisions to the draft report that describes how EPA reports measures at these sites.

In closing, we believe that there is substantial useful information in this report and appreciate this opportunity to comment. Please feel free to contact me or your staff may contact Randy Hippen in EPA's Office of Superfund Remediation and Technology Innovation at 703-603-8829 with additional questions.

Sincerely,


Mathy Stanislaus
Assistant Administrator

Enclosure

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Appendix V: GAO Contact and Staff Acknowledgments

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Staff Acknowledgments

In addition to the individual named above, Vincent P. Price, Assistant Director; Elizabeth Beardsley; Eric Charles; Pamela Davidson; Armetha Liles; Cynthia Norris; and Nico Sloss made key contributions to this report.

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