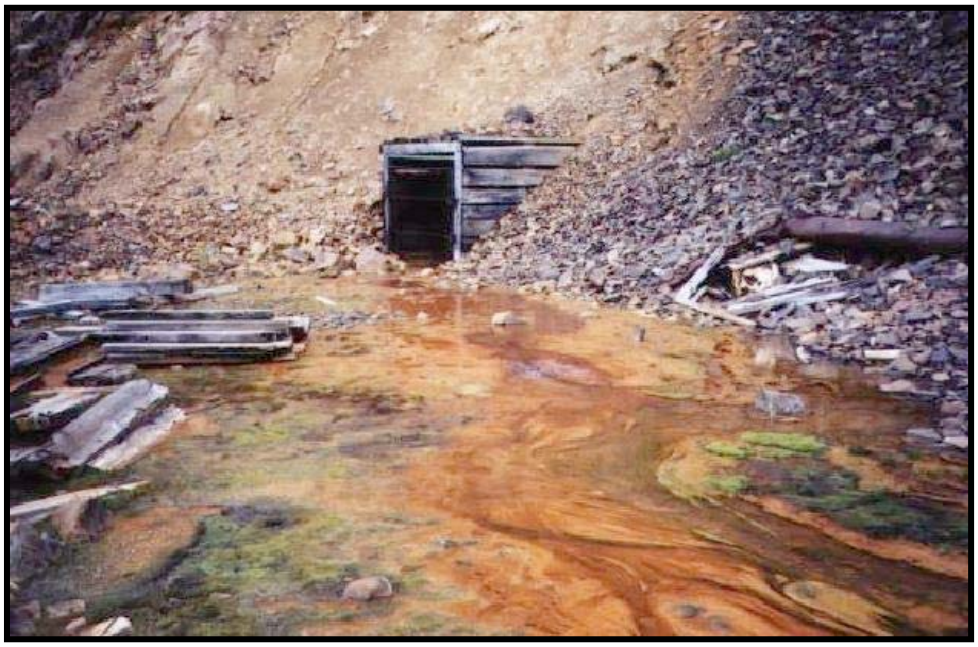
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

AUDIT REPORT

U.S. DEPARTMENT OF THE INTERIOR HAZARDOUS MATERIALS SITE MANAGEMENT



Contaminated Mine Drainage

Photo Courtesy of the Bureau of Land Management

C-IN-MOA-0040-2004 **AUGUST 2005**

United States Department of the Interior

OFFICE OF INSPECTOR GENERAL
Washington, D.C. 20240

August 22, 2005

Memorandum

To: P. Lynn Scarlett
Assistant Secretary for Policy, Management and Budget

From: Earl E. Devaney
Inspector General

Subject: Final Audit Report on Department of the Interior, Hazardous Materials Site Management (Report No. C-IN-MOA-0040-2004).

This report presents the results of our audit of the Department of the Interior's program for the management of hazardous materials. We concluded that the Department and its bureau's did not effectively manage known and suspected contaminated hazardous materials sites and as a result has no assurance that it is effectively protecting the public and the environment. Our report presents recommendations that are designed to assist the Department in furthering its efforts to maximize program effectiveness.

We conducted this audit with staff from the Environmental Protection Agency's Office of Inspector General. We have included their final report on promising practices for hazardous materials site management as Appendix 4 of this report.

In the May 4, 2005 response to the draft report, the Assistant Secretary concurred with all seven of our recommendations. Based on this response we consider recommendations 3, 4, 5, 6, and 7 resolved. However, additional information is needed for us to consider recommendations 1 and 2 resolved. Accordingly, we request that the additional information indicated in Appendix 7 to the report be provided to us.

The legislation, as amended, creating the Office of Inspector General requires that we report to Congress semiannually on all audit reports issued, actions taken to implement our recommendations, and recommendations that have not been implemented. Therefore, this report will be included in our semiannual report.

We appreciate the cooperation provided by the Department and agency staff during our audit. If you have any questions regarding this report, please call me at (202) 208-5745.

EXECUTIVE SUMMARY

WHY WE DID THIS AUDIT

The Department of the Interior (DOI or Department) manages one-fifth of the land mass in the United States. DOI's stewardship responsibilities as a land manager include mitigating sites contaminated by hazardous materials to protect the public and preserve the environment. Our audit objective was to determine whether the Department has effective processes to identify, track, and prioritize hazardous materials sites. We also worked with the Environmental Protection Agency's (EPA) Office of Inspector General (OIG) to identify relevant promising practices that DOI might use to enhance its processes.

WHAT WE FOUND

DOI is not adequately addressing the dangers posed by known and suspected contaminated sites on its land, and as a result DOI has no assurance that it is effectively protecting the public and the environment. DOI does not:

- Know how many contaminated sites are on its land.
- Have an active plan to discover sites.
- Know if the most critical sites are being mitigated first.

DOI has not taken a proactive approach in managing hazardous materials sites. Instead, the office charged with program oversight focused primarily on the Central Hazardous Materials Fund, which is a Congressional mandate, and other external pressures, such as the need to estimate liabilities for environmental cleanup for financial statement reporting purposes. We believe these efforts are not sufficient to effectively manage hazardous materials sites on DOI land.

The Department has not provided practical guidance to the bureaus for identifying, tracking, and prioritizing contaminated sites, and does not oversee these activities. Lacking Departmental leadership, the bureaus did not assign sufficient priority to identifying hazardous materials sites. In fact, three of the four bureaus we audited did not have a proactive site identification process. The fourth bureau had a process to identify contaminated sites, but bureau officials estimated it will take 250 years to complete this process.

In 1993 the Office of Inspector General reported that the Department of the Interior had not identified and evaluated the majority of hazardous materials sites on its land. Further, the Department did not always prioritize contaminated sites to ensure that the most serious sites were cleaned up first. Our current audit found that little

progress has been made in addressing these issues and the Department still has serious deficiencies in its efforts to identify and prioritize hazardous materials sites.

In addition to not adequately addressing the dangers of hazardous materials sites, the Department's inaction may result in escalated cleanup costs. Delays in identifying hazardous sites could hinder identification of the parties responsible for the contamination, preventing the Department from collecting the cleanup costs from these parties. Delays in mitigating hazardous sites may allow the contamination to spread and complicate cleanup efforts.

Our report recommends that the Department develop and implement the necessary tools for a successful program, such as a management information system, uniform policies and procedures, and strong Departmental leadership.

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ACRONYMS

BIA ..... Bureau of Indian Affairs
BLM ..... Bureau of Land Management
CERCLA ..... Comprehensive Environmental Response, Compensation, ... and Liability Act
CERCLIS ..... Comprehensive Environmental Response, Compensation, ... and Liability Information System
CHF ..... Central Hazardous Materials Fund
DAS Group ..... DOI Deputy Assistant Secretaries' Advisory Group ..... on Environmental Policy and Compliance
DOI or Department ..... Department of the Interior
ECL ..... Environmental Cleanup Liabilities Database
EPA ..... Environmental Protection Agency
FWS ..... Fish and Wildlife Service
GAO ..... Government Accountability Office
NPS ..... National Park Service
OEPC ..... Office of Environmental Policy and Compliance
OIG ..... Office of Inspector General

INTRODUCTION

This report presents the results of our audit of the Department of the Interior's (DOI or Department) efforts to manage hazardous materials sites. The objective of our audit was to determine whether the Department has effective processes to identify, track, and prioritize hazardous materials sites.

BACKGROUND

As the nation's principal conservation and largest land-controlling agency, the Department manages the natural resources on 507 million acres of public lands dispersed throughout the United States. Hazardous materials sites on DOI land may endanger human health, natural resources, and the environment. DOI allows numerous activities on its land that generate or use hazardous substances that could result in a hazardous materials site. For example, oil and gas drilling, mining, landfill operations, industrial uses, and pesticide applications may contaminate water supplies or otherwise damage the environment and put the public at risk. DOI's own operations—such as underground fuel storage tanks—may be another source of contamination. DOI lands are also susceptible to illegal activities such as open dumping of potentially contaminated materials.

WHAT IS A HAZARDOUS MATERIALS SITE?
A hazardous materials site is where hazardous substances—such as asbestos, fuel, arsenic, or lead—have been improperly managed or otherwise released creating substantial or potential threats to human health or the environment. Hazardous materials possess at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity.

In reports to the Office of Management and Budget, DOI has estimated that it might cost as much as $1.3 billion[1] to assess, cleanup, and monitor these sites.

Two principal environmental laws govern the management of hazardous materials and cleanup of contaminated sites. The Resource Conservation and Recovery Act (RCRA) of 1976, as

[1] The DOI may not be solely responsible for these estimated costs. Other parties may have been responsible for the contamination at these sites and may be responsible for all or part of site remediation.

amended, applies to active operations and imposes strict controls over hazardous materials from their creation to final disposal. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, commonly known as the Superfund Law, governs the cleanup of abandoned and uncontrolled sites for potential or actual releases of hazardous substances. Other laws, such as the Clean Water Act, Toxic Substances Control Act, and the Clean Air Act, also impact the Department's management of hazardous materials sites.

In the Department of the Interior, the Office of Environmental Policy and Compliance (OEPC) has the responsibility to oversee, coordinate, and review all aspects of DOI's environmental policy. OEPC is responsible for the Department's proactive environmental activities, such as assisting bureaus in implementing strategies and management controls to meet the requirements of Executive Order 13101 "Greening the Government Through Waste Prevention, Recycling and Federal Acquisition." OEPC assists bureaus in developing programs to procure environmentally friendly products and to prevent pollution by properly disposing of or recycling DOI property. It is also responsible for overseeing, coordinating, and reviewing all aspects of DOI's involvement with hazardous materials sites. This responsibility includes tracking bureau and office site activities, providing a centralized methodology for the prioritization of sites, and coordinating and developing DOI environmental policy.

OEPC currently has approximately 39 employees, 1 of them is responsible for managing the Department's hazardous materials site management activities.

OEPC also oversees the Central Hazardous Materials Fund (CHF), which annually receives appropriations to allow the Department to mitigate contaminated sites under Superfund

Law. OEPC is working with the Office of Financial Management to implement a Department-wide Environmental Cleanup Liabilities database. This database is being used to calculate the Department's liability associated with contaminated sites for financial statement reporting purposes.

CENTRAL HAZARDOUS MATERIALS FUND (CHF)

In 1995, the Congress created the CHF to allow the Department to mitigate contaminated sites under Superfund Law. This is the Department's only centralized program for mitigating contaminated sites. In FY 2003, the CHF was funding cleanup activities for 46 sites.

Our audit covered activities performed by OEPC and four bureaus—Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and National Park Service (NPS). The scope and methodology of our audit is detailed in Appendix 1.

EPA PROMISING PRACTICES

We requested EPA-OIG's assistance in identifying promising practices employed by EPA. EPA has over 20 years experience with information systems and processes to identify, assess, prioritize, and estimate costs of hazardous materials sites through EPA's implementation of the Superfund program. We believe the Department could benefit from EPA's extensive knowledge in addressing hazardous materials sites.

EPA-OIG identified promising practices in the areas of site discovery, site assessment, prioritization, and cost estimating. We have included summaries about EPA promising practices within our report. EPA-OIG's Evaluation Report with the full description of the promising practices is included as Appendix 4.

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RESULTS OF AUDIT

More than a decade after significant problems were identified in the program, DOI has not made discernable progress in strengthening the program.

The Department has yet to implement an active process to identify potentially hazardous sites, does not have a complete inventory of known or suspected contaminated sites, and does not have a system to prioritize hazardous materials sites.

This occurred primarily because the Department did not provide sufficient leadership, guidance, or oversight to the bureaus. None of the bureaus we audited had a complete listing of all known hazardous materials sites, and only one of the bureaus had an ongoing process to assess the condition of its lands. Further, bureaus gathered and recorded hazardous materials site data in an inconsistent and uncoordinated manner. The resulting patchwork of information is not adequate for the Department to manage contaminated sites or ensure accurate financial reporting.

Without effective processes to manage hazardous materials sites, DOI is prolonging potential public and environmental exposure to hazardous contamination and toxic substances. For example, the Bureau of Land Management (BLM) was aware of contamination at a site in 1988 but did not include the site in its inventory, nor was it added to the Department's inventory until 2005. Additional testing in 2002 showed both lead and arsenic levels at the site exceeded BLM established critical levels by 17 and 20 times, respectively. BLM took no action to warn the public of the contamination between 1988 and 2005; meanwhile:

- An elementary school was constructed about 1/3 mile from the contaminated area.
- Existing houses continued to be dependent on water wells about 800 feet away from the site. Initial testing has found one well to be contaminated with high levels of lead and arsenic.
- New houses are being constructed about 1 mile from the site.

Auditors observed individuals collecting rock samples and taking them from the contaminated area.

- The site, including the contaminated areas, has become a popular spot for recreation activities such as driving All-Terrain-Vehicles and camping[2].

Lacking an adequate process for administering hazardous materials sites, DOI is also risking increased liability for escalating cleanup costs and decreased probability of identifying the parties responsible for the contamination and associated cleanup.

LEADERSHIP AND GUIDANCE

OEPC has not actively overseen the bureaus' activities and has not issued Department-wide policies and procedures.

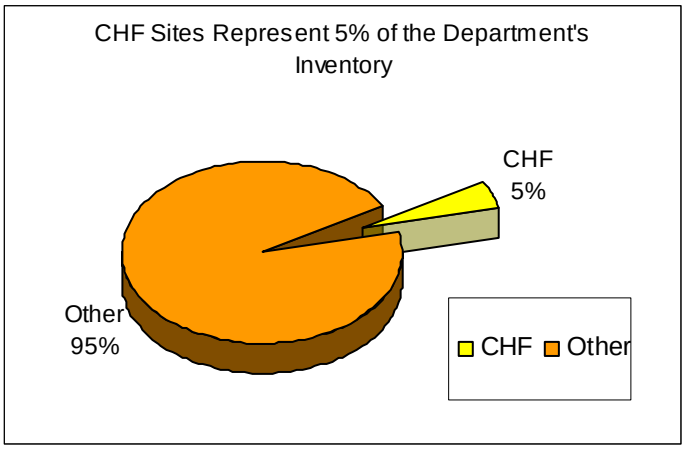
The Department has not taken an active leadership or oversight role in the management of hazardous materials sites. Initially, OEPC officials told us that they did not have the authority to oversee the bureaus' actions in regard to inventorying, prioritizing, and assessing hazardous materials sites. However, the Departmental manual makes it clear that, since 1989, OEPC has had the authority to:

- Issue policy and procedures.
- Review and comment on bureau hazardous materials budgets.
- Track bureau site activities.
- Provide a centralized methodology for site prioritization.
- Oversee all categories of contaminated sites.
- Advise the Assistant Secretary for Policy, Management and Budget on cleanup alternatives.

We found however, that OEPC has not issued appropriate policy and procedures. Also, OEPC officials stated that historically the bureaus have operated independently in regard to managing hazardous materials sites and that OEPC did not have the tools available to ensure the bureaus adhere to uniform procedures.

[2] On March 15, 2005, the OIG issued a flash report (C-IN-BLM-0013-2005) identifying public safety issues at this site. The report made four recommendations to correct the safety issues and protect the public. In its response to our report, BLM agreed to take appropriate action to address the recommendations.

While OEPC has not exercised all its authorities, it has coordinated and administered the Central Hazardous Materials Fund (CHF). The CHF is funded to mitigate some of the Department's highest known priority sites. According to DOI, since 1995 it has expended nearly $100 million and negotiated with responsible parties to contribute funds and services for site cleanup with an estimated value of $150 million. The CHF, however, addresses only about 5 percent of the Department's current inventory of hazardous materials sites[3].



The bureaus' current fragmented policies and procedures prevent effective Department-wide management and do not ensure that the most critical sites are being addressed first.

COMPREHENSIVE INVENTORY

The Department of the Interior's inventory of known and suspected hazardous sites lacks the information to make responsible management decisions.

The Department does not have a comprehensive inventory of its known and suspected hazardous materials sites. Since 1993, OIG and Government Accountability Office (GAO) reports (see Appendix 2) have emphasized the need for a comprehensive inventory of hazardous materials sites on DOI lands. A comprehensive inventory is needed to expedite risk assessments and make reliable cleanup and prioritization decisions necessary to protect the public and the environment.

In 2003, the Department started developing the Environmental Cleanup Liabilities Database (ECL) for financial reporting purposes to replace the annual process of assembling a list of environmental liabilities from the individual bureaus. Department officials told us that they

[3] Our audit showed that the Environmental Cleanup Liabilities Database (ECL) is incorrect and does not include all known hazardous materials sites (see p. 7).

planned to use the ECL as a management tool for hazardous materials sites and as an inventory of hazardous materials sites. The ECL is compiled by bureau officials from hazardous materials site data maintained at the bureau or field office level. The types and quality of the data included in the ECL varies. For example, some bureaus added additional information about the types of contamination at a specific hazardous materials site in the comments section of the database, while other bureaus did not. Our audit determined that the ECL does not include all known and suspected hazardous materials sites and does not include the kinds of information needed for the ECL to be used as a management tool.

Incomplete Database

The ECL is incomplete as an inventory of hazardous materials sites on DOI land because the bureaus did not record all known or suspected[4] contaminated sites. For example:

- The Fish and Wildlife Service (FWS) had a common practice of not recording contaminated sites in the inventory unless the estimated cleanup costs exceeded $250,000 per site. As a result, FWS did not record at least 25 known contaminated sites in the inventory with a total estimated cleanup cost of $1.6 million.

- The National Park Service (NPS) has not yet recorded nine suspected sites on the ECL that were discovered in 1976 at a park which is located in a highly populated area. As of FY 2004, none of these sites have been recorded in the ECL.

Department officials were aware the ECL represented an incomplete inventory of hazardous materials sites but took little or no action to ensure that all known sites were recorded. For example, OEPC officials noted that five contaminated sites receiving cleanup funds from the CHF in FY 2003 were not recorded in the Department's inventory, but the OEPC officials did not require the bureaus to enter these sites into the database.

[4] For purposes of our audit we defined a suspected hazardous materials site as a site identified by the public or Departmental employees where there has been a suspected release of hazardous materials or other contamination. These sites need to be included in the Department's inventory so that the sites can be prioritized and funded for testing and assessment.

Management Information

The Department's current inventory of hazardous materials sites—the ECL—lacks the information needed to make responsible management decisions. Also, the inventory does not have needed reporting capabilities, such as the ability to generate a list of prioritized sites. A management information system should contain information such as:

- Type and extent of contamination.
- Risks to human health or the environment.
- Identification of parties responsible for cleanup costs.
- Specific site location.

The Department's current ECL is not designed to capture this data. Some bureaus enter a portion of the data in a comments section of the database, but others do not.

Further, while the bureaus maintain information such as type of contamination or geographic location about known and suspected hazardous materials sites, the information is collected and maintained in an inconsistent manner. For example, one bureau may record a site by the type of contamination, and another bureau may use geographical reference names. Also, some bureaus list the types of contaminants while others do not.

In addition to inconsistencies among bureaus, there are often inconsistencies within bureaus regarding how a site is recorded. For example, one BLM field office records several mine features, such as individual shafts, buildings, and tailings, as one hazardous site. Another field office lists each feature as a separate site. This has occurred because the Department has not provided guidance or oversight on the types of information to be collected, maintained, or submitted.

As a result, the Department's database is incomplete, inconsistent, and not suitable for making sound management decisions or providing accurate financial data. Nor can the Department obtain complete and consistent

data from the bureaus. Complete and accurate inventory data are necessary for the Department to evaluate, prioritize, and monitor hazardous sites.

EPA's report provides background information on EPA's management information system. A review of this system may be helpful to DOI to develop a comprehensive management information system. EPA identified consistent terminology in the management information system as critical to its success because of the reliance on data from multiple bureaus. For EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), EPA requires state and tribal data to comply with standards established by the Environmental Data Standards Council. EPA noted these standards could serve as a useful tool for DOI to review and use when building its management information system.

DISCOVERY OF SUSPECTED SITES

The bureaus employ a reactive approach to site discovery often only recording sites after they have been identified by the public.

DOI does not have a proactive process to identify hazardous materials sites and evaluate the risks posed to human health, wildlife, and the environment. Our audit also found three of four bureaus did not have a proactive site identification program. One bureau has initiated a site discovery process. However, based on its current plan the bureau will need approximately 250 years to complete its review.

The bureaus employ a reactive approach to site discovery, often only recording sites after the sites have been identified by the public. GAO reported in 1999 that sometimes BLM only identified hazardous sites following injuries to citizens or livestock.

The bureaus have told us that it is not practical to visually inspect every acre for potential contamination. While we agree that it may not be practical to inspect every acre, the Department and its bureaus are not effectively using the tools and information that are available to identify hazardous materials sites. For example, existing databases and management information systems, such as the systems designed for oil and gas lease management or its facilities information systems, contain useful information. However, the Department did not provide guidelines or instructions to the bureaus on how to use these databases.

PROACTIVE SITE DISCOVERY PROCESS

Databases maintained by the bureaus contain information on potentially contaminated sites. We reviewed information from the Bureau of Indian Affairs' (BIA) maintenance management system and initially identified 1,378 facilities with potential asbestos contamination. After further review of the information in the system, we narrowed the number of facilities to be reviewed to 10.

EPA identified several promising practices to aid DOI in creating a useful site discovery process. EPA suggests that DOI should examine existing site inventories and work with states, tribes, and communities to obtain information to identify potential sites. EPA also suggests DOI develop user-friendly checklists that employees could use to create initial reports of potential hazardous materials sites. Like EPA, DOI could provide a web-based petition for citizens to formally refer a potential site.

PRIORITIZATION PROCESS

The Department cannot determine which sites need to be addressed first.

The Department does not prioritize and rank all of its hazardous materials sites. In multiple reports, our office and GAO have identified the need for the Department to prioritize sites on a national basis. The Department has agreed with these recommendations, but it still has not implemented a Department-wide prioritization process. In 1993, OEPC developed a pilot program to rank sites on a nationwide basis; however, this ranking system was never finalized or published as Departmental guidance.

The Department has a process to prioritize sites nominated for funding by the CHF, the Department's central cleanup fund. A 2003 review of the Department's CHF conducted by the Bureau of Reclamation (BOR)[5] found that the

[5] The BOR completed the Department of the Interior's Central Hazardous Materials Fund Program Review in December 2003. The objectives of the review were to review and document the DOI's CHF objectives and programmatic procedures and to evaluate the effectiveness of the program.

resulting prioritizations were adequate. However, these sites account for only 5 percent of the Department's recorded inventory and may not represent the only critical sites. The Department does not prioritize the remaining 95 percent of the inventory.

The bureaus have some information regarding prioritization of hazardous materials sites on bureau land, but the information is not complete or comparable. We found that bureaus developed varying methods for establishing priorities and making funding decisions for contaminated site mitigation.

BLM prioritizes sites only within program areas, rather than across the Bureau as a whole. For example, contaminated sites resulting from abandoned mines are not ranked against open dumps. Historically, BIA split funding roughly equally across regions, without even considering the relative risks of sites in the individual regions. Because BLM and BIA are not prioritizing all possible sites, they do not have assurance that they are addressing the most serious sites first. Consequently, the Department cannot use the bureaus' prioritization results to identify its highest priority sites. Therefore, the Department also lacks assurance that the most serious hazardous sites are being cleaned up first.

In contrast, both NPS and FWS conduct site prioritization based on information submitted by the parks or refuges. Because NPS and FWS rank sites on a national basis, these Bureaus have some assurance that the most critical sites are being addressed first. However, DOI does not request this data.

To establish a prioritization process, EPA offered the following promising practices:

- Develop a risk-based method to prioritize hazardous materials sites and apply an approach that ranks sites based on current and future land uses, ecological risks, and tribal factors/cultural considerations.

- Develop a tracking mechanism for sites DOI sets aside as not requiring cleanup actions. DOI should work with states, tribes, and communities to stay

aware of changing site conditions that may warrant reprioritization of already evaluated sites.

DOCUMENTATION

The Department and its bureaus may not have reliable data for management purposes or financial reporting.

Cost estimates and financial liability codes[6] for hazardous materials sites were not always adequately supported. The bureaus and the Department rely on this information to prepare annual financial statements. Bureau officials assign liability codes to hazardous materials sites based on the likelihood that the bureau or Department will be financially responsible for the cleanup costs. For financial reporting purposes this code dictates whether the estimated cleanup costs will be accrued, disclosed, or undisclosed in the bureau and Department financial statements.

We reviewed 125 site files (14 percent) of the 911 sites listed on the FY 2003 ECL. Cost estimates for 108 (86 percent) of the 125 sites were not adequately supported. Additionally, for the 125 site files we evaluated, 103 (82 percent) did not have supporting documentation to justify the liability code selected. As a result, the Department and the bureaus may not have reliable data for management purposes or financial reporting.

Cost Estimates

Bureau support for the cost estimates reported on the ECL was inconsistent. Some bureaus reported estimates that officials could not explain. For example, NPS identified a suspected hazardous materials site at a former landfill and has been reporting an estimated cost for site assessment work of between $50,000 and $1,000,000. NPS, however, had no supporting documentation for this estimate and current park employees did not know how it was developed. In other instances, bureaus had well documented cost estimates but reported other amounts in the inventory without explanations. For example, BIA, BLM, FWS, and NPS had professional contractors prepare cost analyses for site cleanup. The estimates in the inventory did not match the cost analyses prepared by the

[6] Hazardous materials sites may be assigned a financial liability code of probable, reasonably probable, or remote. Probable means that the future outflow or other sacrifice of resources is more likely to occur than not, and cost estimates for these hazardous materials sites are accrued in the financial statements. Reasonably probable means that the chance of future outflow or other sacrifice of resources is more than remote but less than probable. Cost estimates for reasonably probable hazardous materials sites are disclosed in the financial statements. Remote means that the chance of future outflows occurring is slight and cost estimates for these hazardous materials sites are neither accrued nor disclosed in the financial statements.

contractors. Bureau officials could not explain the differences.

At many site locations, cost estimates were derived based on the historical knowledge of bureau employees. The site files did not contain adequate documentation explaining the methodologies and assumptions used to develop the estimates. For example, supporting documentation for the estimate did not identify the type and extent of contamination or describe cleanup options. Without this type of information, cost estimates may not be reliable and cannot be easily updated.

EPA staff use a web-based tool to prepare cost estimates for each work assignment at a site. Such a tool would walk the bureau employees through a series of questions about the site and then provide standard or historical reference information to build the cost estimate. This tool would automatically create documentation on the methodology and assumptions used to develop a cost estimate. Cost estimates will be easier to update with this information readily available. Also, the basis for the cost estimates would be more consistent between bureaus and among bureau field offices.

Financial Liability Codes

The bureaus and the Department do not have documentation available to support the liability code assigned to specific hazardous materials sites. Without supporting documentation neither the bureaus nor the Department can verify the chosen liability codes.

In most instances, we did not have enough information to assess the liability codes for the hazardous materials site files reviewed. However, in two cases we identified incorrect codes. Specifically, for two NPS sites where NPS had caused the contamination, the assigned liability codes did not reflect NPS's culpability and responsibility to pay for the cleanup actions. Based on our audit work, NPS corrected these errors prior to financial reporting for FY 2004. This situation raises concerns as to the accuracy of the information reported in the financial statements for Environmental Contingent Liabilities. Financial statement auditors have identified similar problems in the FY 2002 and FY 2003 financial statement audits. The Department

needs to take steps to validate the liability codes on its inventory.

EPA did not identify any specific promising practices to improve DOI's documentation for liability codes. BIA, however, has a manual, which includes standardized forms to document this process. The Department should consider using BIA's form, or something similar, across all bureaus to support the decisions on liability codes.

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RECOMMENDATIONS

To address the deficiencies identified in this report, we made seven recommendations to the Assistant Secretary for Policy, Management and Budget (PMB). PMB provided the OIG with its initial response to the draft report on April 25, 2005 (Appendix 5). Subsequent discussions with OEPC resulted in a supplemental response which was received on May 4, 2005 (Appendix 6). Both responses were considered in our comments and in preparation of the final report.

Our recommendations and assessment of PMB's responses follow:

1. Require OEPC to develop and implement uniform policies and procedures for bureaus to identify and prioritize hazardous sites.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with the recommendation. However, PMB did not specifically address the need to develop and implement uniform policies and procedures for bureaus to prioritize hazardous sites. Specifically, PMB stated:

> The Director, OEPC will request that the DOI Deputy Assistant Secretaries' Advisory Group on Environmental Policy and Compliance (DAS Group) convene for discussion and for decision on whether a uniform policy for identification and discovery is needed. The DAS group will meet not later than the fourth quarter FY 2005 to make this decision. The Director, OEPC will inform the OIG of the outcome of the DAS Group meeting within one week of the date of such meeting and provide the OIG with any guidance developed.

OIG CONCLUSION

OIG will consider this recommendation resolved if the DAS group recommends that OEPC take action to develop and implement uniform policies and procedures for bureaus to **both** identify and prioritize hazardous sites.

2. Require OEPC to oversee the Bureaus' actions to ensure compliance with policy and procedures.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with this recommendation. According to PMB, if the DAS group directs OEPC to provide guidance and oversight on uniform policies and procedures as discussed in Recommendation 1, it will do so.

OIG CONCLUSION

OIG will consider this recommendation resolved if the DAS group recommends that OEPC take action to oversee the Bureaus' actions to ensure compliance with policy and procedures

3. Require OEPC to develop a Management Information System that captures consistent and accurate data for all hazardous materials sites.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with this recommendation. According to PMB, OEPC is developing the ECL database to be both a management information system (MIS) and to support the accounting system. The ECL will be designed to capture accurate and consistent site information based on available data.

OIG CONCLUSION

OIG considers this recommendation resolved but not implemented.

4. Require the bureaus to revaluate current cost estimates and liability codes for accuracy and report accurate information to OEPC.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with this recommendation. According to PMB, OEPC is working with the Office of Financial Management and the bureaus to address these issues and will establish requirements to reevaluate, review, and document costs on an annual basis. The first set of the reviews will be done by the end of the fourth quarter FY 2005.

OIG CONCLUSION

OIG considers this recommendation resolved but not implemented.

5. Provide the necessary resources to OEPC to implement an effective hazardous site management program.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with this recommendation pending the DAS groups' decision. Budget guidance for FY 2007 will include a review of OEPC to determine whether additional resources are needed. If so, the request for additional resources will be reviewed by the DAS group. The analysis of OEPC's resource requirements will be done by the end of the third quarter FY 2006.

OIG CONCLUSION

OIG considers this recommendation resolved but not implemented.

6. Evaluate current resource levels against cleanup needs. Request additional resources if necessary to address critical sites promptly.

PMB RESPONSE

In its May 4, 2005 response to the draft report (Appendix 6), PMB concurred with this recommendation. According to PMB, the implementation of the ECL database will provide a more complete assessment of cleanup and environmental management needs, which in turn will be worked into the budget process.

OIG CONCLUSION

OIG considers this recommendation resolved but not implemented.

7. Consider EPA's promising practices when developing new procedures and tools for identifying, tracking, and prioritizing hazardous materials sites.

PMB RESPONSE

In its May 4, 2005 response to the draft report, PMB concurred with this recommendation. According to PMB, the DAS group will review the contents of the report and provide any recommendations to OEPC.

OIG CONCLUSION

OIG considers this recommendation resolved but not implemented.

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OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of our audit was to determine whether the Department and its bureaus have effective processes to identify, track, and prioritize hazardous materials sites. This audit was completed in partnership with the Environmental Protection Agency (EPA) Office of Inspector General (OIG). EPA's OIG summarized EPA's process of discovering, assessing, prioritizing, and cost estimating hazardous materials sites for cleanup and identified promising practices for consideration by the Department of the Interior (DOI or Department).

The scope of our audit covered federal lands under the management of the Department. We conducted audit verification work at the Department and four bureaus: Bureau of Indian Affairs (BIA), Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), and National Park Service (NPS). We used the Environmental Cleanup Liabilities Database (ECL) as of September 30, 2003, as the baseline for our audit. The following areas were excluded from the scope of this audit: currently operating sanitary landfills; transportation, storage, and handling of hazardous materials; current operations at DOI facilities; physical hazards; and identification of actual or potential contamination on lands newly acquired or to be acquired.

As part of our audit, we sent a questionnaire to 101 bureau officials and conducted audit fieldwork to obtain information on hazardous materials site management. However, we based our audit conclusions only on the information we validated during our fieldwork. We did not use the questionnaire because our fieldwork indicated that the responses were not reliable. For example, 30 out of 53 respondents stated that they discover hazardous sites by performing periodic inventories or by conducting surveys of public land. Conversely, audit work at regional, state, and field locations of the four bureaus we reviewed showed that three bureaus did not conduct periodic inventories or surveys of public land to identify hazardous sites and the fourth bureau had an ineffective program.

To accomplish our objective, we gained an understanding of both Department and bureau roles in the site discovery, assessment, and prioritization process. To assess the effectiveness of the program, we conducted the following audit steps:

- Gathered general, administrative, and background information to provide us with a working knowledge of the hazardous materials site program at the Department and bureau organizational levels.

- Identified the policies and procedures used by DOI and its bureaus to inventory and prioritize hazardous sites.

- Identified the policies and procedures that DOI and its bureaus use to estimate the costs of site assessment and cleanup.

- Identified the procedures that DOI uses to provide oversight for hazardous sites.

- Examined supporting documentation, existing bureau and EPA databases, and Department data to identify sites that were not recorded on the Department's inventory.

- Examined supporting documentation for cost estimates to determine if reported amounts were accurate.

- Examined documentation to determine if assignment of liability codes was supported.

We performed our audit from February 2004 to March 2005 in accordance with the *Government Auditing Standards* issued by the Comptroller General of the United States. Accordingly, we included such tests of records and other auditing procedures that we considered necessary under the circumstances. We included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Internal control and compliance weaknesses identified during our audit are discussed in the Results of Audit section of this report. The recommendations, if implemented, should improve the internal controls in these areas. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies or noncompliance with laws and regulations that may have existed at the time of our audit. To satisfy the Government Accountability Office (GAO) Government Auditing Standards on relying on the work of others, we reviewed the EPA audit team's qualifications, roles, and responsibilities for the audit; statements of independence; and the audit plan. We concluded that EPA is qualified to perform its portion of the audit and that the audit plan was designed to gather relevant and competent audit evidence. EPA's audit work is significant to our audit and we relied on and referred to it in this audit report.

PRIOR AUDITS

We reviewed audit reports issued as far back as 1993 by our office; the Government Accountability Office (GAO); and KPMG LLP, a certified public accounting firm, that made recommendations similar to those in this audit report.

- In March 1993, we issued a report titled *Management of Hazardous Materials by the Department of the Interior*. The key issues in the report were:

  - The Department had not identified the majority of suspected hazardous materials sites.

  - Individual bureaus within the Department conducted the site identification and inventory process in an inconsistent, uncoordinated manner, with minimal Departmental guidance.

  - Contaminated sites were not always prioritized to ensure that the most serious situations would be corrected first.

  The audit report recommended that the Department:

  - Direct the bureaus to develop actions plans to ensure that hazardous materials site inventories are completed.

  - Require the Office of Environmental Affairs (currently the Office of Environmental Policy and Compliance) to develop and implement Department-wide inventory guidelines and procedures to ensure that the bureaus conduct comprehensive inventories.

  - Require the Office of Environmental Affairs to develop and implement a Department-wide prioritization system.

  - Authorize and require the Office of Environmental Affairs to perform independent oversight of bureaus' hazardous materials site inventory, evaluation, prioritization, and cleanup activities.

  - Provide the Office of Environmental Affairs with necessary resources, both funding and staffing, to accomplish its additional Hazardous Materials Program oversight and reporting responsibilities.

- In July 1994, GAO issued a report titled *Federal Facilities: Agencies Slow to Define the Scope and Cost of Hazardous Waste Cleanups.* The key issues in this report that related to DOI contaminated site management were:

    - Inventories of hazardous materials sites were still incomplete for some of the Department's agencies.

    - BLM and FWS lack a comprehensive program for identifying hazardous sites.

    - Studies by Congressional committees and the Department concluded that, despite the possible enormity of cleanup problems, the Department's agencies have failed to adequately identify and address problems of hazardous materials contamination on their lands.

  GAO recommended that Congress amend CERCLA to require agencies to submit to EPA plans for completing their hazardous materials site inventories, reporting annually on the progress of implementation of their plans, and to develop and report estimates of total costs to cleanup their potential hazardous materials sites.

- In June 1996, GAO issued a report titled *Federal Facilities: Consistent, Relative Risk Evaluations Needed for Prioritizing Cleanups.* The key issues in the report that related to DOI contaminated site management were:

    - The Department had developed a centralized process for setting priorities for Central Hazardous Material Fund (CHF) sites, but bureaus set priorities for all other sites.

    - The Department cannot fully set priorities without a complete inventory of contaminated sites and adequate data on the risks at these sites.

    - The Department does not adequately evaluate the relative risks of its sites Department-wide.

  GAO suggested that Congress consider amending CERCLA to require federal agencies to develop a consistent process for assessing and ranking the relative risks of hazardous materials sites and to employ this process as a factor in setting priorities for federal hazardous materials cleanups nationwide.

- In April 1999, GAO issued a report titled *Superfund: Progress Made by EPA and other Federal Agencies to Resolve Program Management Issues.* The key issues in the report that related to DOI contaminated site management were:

    - BLM has not set nationwide cleanup priorities because it has not yet developed an overall cleanup strategy or a comprehensive inventory of its

hazardous materials sites, estimated to cost billions of dollars to address. GAO first identified this problem in a report issued in 1987.

- In the FY 2002 annual financial statement audit, KPMG reported that there were weaknesses in the Department's controls over environmental liabilities. KPMG reported that the Department of the Interior:

  - Had not fully developed policies and procedures for estimating environmental liabilities.

  - Did not have a prioritized list of cleanup activities, planned cost studies, and projects by risk score factor.

  - Did not provide sufficient direction to regional locations to prepare and submit funding requests and to communicate funding results back to the regions.

  - Did not have policies to ensure identification of the responsible party for environmental liabilities.

  - Did not consistently apply the same methodology to estimate liabilities.

  - Did not have a sufficient number of specialists to assist with the cost estimation process and monitor cleanup efforts.

  - Had not developed a Departmental prioritized cleanup plan or developed and communicated policies on preparing and submitting funding requests.

  - Did not require its components to apply the same methodology to estimate liabilities.

- In the FY 2003 annual financial statement audit, KPMG reported that there were weaknesses in the Department's controls over environmental liabilities. KPMG reported that the Department of the Interior did not:

  - Consistently research and document the basis for changes to environmental liabilities.

  - Consistently apply policies for estimating environmental liabilities.

  - Provide periodic training to scientists, financial management staff, and others to ensure that they understand the Department's and federal accounting standards on environmental liabilities.

  - Establish controls to ensure that changes in environmental liabilities are properly researched, supported, and recorded.

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LOCATIONS VISITED/CONTACTED

Department of Health and Human Services

Office of Tribal Programs	Rockville, Maryland*

Department of the Interior

Office of the Secretary

Office of Environmental Policy and Compliance	Washington, DC
Office of the Solicitor	Washington, DC*

Bureau of Indian Affairs

Division of Accounting Management	Washington, DC*
Division of Energy and Minerals Resources	Lakewood, CO
Division of Environmental and Cultural Resources Management	Washington, DC*
Eastern Oklahoma Region Office	Muskogee, OK*
Jicarilla Agency Office	Dulce, NM*
Navajo Region Office	Gallup, NM
Northern Pueblos Agency	Espanola, NM*
Northwest Region Office	Portland, OR
Office of Facilities Management and Construction	Albuquerque, NM*
Rocky Mountain Region Office	Billings, MT*
Southern Pueblos Agency	Albuquerque, NM
Southwest Region Office	Albuquerque, NM
Western Region Office	Phoenix, AZ

Bureau of Land Management

Alaska State Office	Anchorage, AK
Arizona State Office	Phoenix, AZ*
Bakersfield Field Office	Bakersfield, CA*
California Desert District	Moreno Valley, CA*
California State Office	Sacramento, CA
Carson City Field Office	Carson City, NV

* Offices contacted only.

Colorado State Office	Lakewood, CO
Folsom Field Office	Folsom, CA
Grand Junction Field Office	Grand Junction, CO
Lands & Realty Group	Washington, DC*
Miles City Field Office	Miles City, MT*
Nevada State Office	Reno, NV
Rio Puerco Field Office	Albuquerque, NM*
Tucson Field Office	Tucson, AZ
Uncompahgre Field Office	Montrose, CO
Wyoming State Office	Cheyenne, WY

Fish and Wildlife Service

Atchafalaya, National Wildlife Refuge	Lacombe, LA
Delta National Wildlife Refuge	Venice, LA
Division of Engineering	Lakewood, CO
Division of Environmental Quality	Arlington, VA
J. Clark Salyer, National Wildlife Refuge	Upham, ND
North Louisiana Refuge Complex	Farmerville, LA*
Southeast Regional Office	Atlanta, GA*
Southwest Regional Office	Albuquerque, NM*
St. Catherine Creek Refuge	Sibley, MS*
Upper Souris, National Wildlife Refuge	Berthold, ND

National Park Service

Alaska Region	Anchorage, AK
Attorney Advisor's Office	Boulder, CO
Environmental Management Program Staff	Boulder, CO
Gateway National Recreation Area	Staten Island, NY
Grand Teton National Park	Jackson's Hole, WY
Intermountain Region	Lakewood, CO
Lassen Volcanic National Park	Mineral, CA
Mojave National Preserve	Barstow, CA
Mt. Rainier National Park	Ashford, WA
Olympic National Park	Port Angeles, WA
Pacific West Region Office	Oakland, CA*
Valley Forge National Historic Park	Valley Forge, PA
Whiskeytown National Recreation Area	Whiskeytown, CA
Washington Office	Washington, DC*
Yellowstone National Park	Yellowstone National Park, WY

* Offices contacted only.

Office of Surface Mining

Division of Technical Support	Washington, DC*

Indian Tribal Governments

Navajo Environmental Protection Agency	Window Rock, AZ
Pueblo of Acoma	Acoma, NM

Local Governments

Pima County Parks and Recreation	Tucson, AZ
Tucson Unified School District	Tucson, AZ

Private Organizations

National Tribal Environmental Council	Albuquerque, NM

* Offices contacted only.

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OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

EPA Practices for Identifying and Inventorying Hazardous Sites Could Assist Similar Department of the Interior Efforts

Report No. 2005-P-00020

August 22, 2005

Report Contributors: Erin Barnes-Weaver
Jennifer Dwyer
Steven Textoris
Carolyn Copper

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
DOI	Department of the Interior
EPA	Environmental Protection Agency
HRS	Hazard Ranking System
IGCE	Independent Government Cost Estimate
NPL	National Priorities List
NFRAP	No Further Remedial Action Planned
OIG	Office of Inspector General
PA	Preliminary Assessment
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SI	Site Inspection

U.S. Environmental Protection Agency
Office of Inspector General

2005-P-00020
August 22, 2005

At a Glance

Catalyst for Improving the Environment

Why We Did This Review

Recent audits criticized the Department of the Interior for weaknesses in its controls over environmental liabilities resulting from hazardous waste sites. For example, the Department has not developed policies or procedures for estimating environmental liabilities, and does not have a prioritized list of cleanup activities. The Department initiated an effort to develop a database to capture uniform information for financial reporting purposes.

The Department of the Interior Inspector General initiated an audit to evaluate the Department's processes to identify, track, and prioritize potential hazardous waste sites. Since, the Environmental Protection Agency (EPA) has over 20 years experience with information systems and processes to identify, assess, prioritize, and cost estimate Superfund hazardous waste sites, we worked with the Interior Department's Inspector General to identify relevant promising practices for the Department to consider to improve its processes.

For further information, contact our Office of Congressional and Public Liaison at (202) 566-2391.

To view the full report, click on the following link:

www.epa.gov/oig/reports/2005/20050822-2005-P-00020.pdf

EPA Practices for Identifying and Inventorying Hazardous Sites Could Assist Similar Department of the Interior Efforts

What We Found

EPA has several mechanisms in place to discover new sites, including having strong relationships with State offices to obtain new site information. EPA screens sites before including them in its inventory or priority list of sites requiring further action. After identifying a site, EPA performs a preliminary assessment to determine the eligibility for a response action and to prioritize sites for further action. EPA also offers automated screening tools to assist regional staff in assessing and inspecting sites. EPA's Hazard Ranking System scores sites based on the likelihood of release or potential release, the characteristics of site waste, and the people or sensitive environments affected by the release. Following selection of the cleanup remedy, EPA uses a panel of experts to evaluate risks and establish funding priorities for new cleanups. EPA estimates changing project costs throughout the process of prioritizing sites, and balances cost as one of several criteria to choose suitable cleanup options.

The Department of the Interior, as a Federal land manager responsible for addressing hazardous sites on its lands, could apply several practices used by EPA to ensure that the Department addresses its highest priority sites first, including:

Site Discovery

- Consult existing site inventories and work with States, Tribes, and communities to obtain information to identify potential sites.
- Develop and apply user-friendly checklists and templates to gather initial site information and generate consistency in reports by bureau field staff.
- Consult upcoming EPA guidance on preliminary assessments and site inspections at Federal facilities, as well as a web-based hazardous waste compliance assistance center.

Site Assessment and Prioritization

- Develop and apply automated tools to quickly assess sites and provide uniformity. Consider EPA's automated tools as a source of ideas.
- Develop a risk-based prioritization method that ranks health risks and considers land uses, ecological risks, and tribal factors.
- Develop a tracking mechanism for sites the Department sets aside as not requiring cleanup attention, and work with States, Tribes, and communities to stay aware of changing site conditions that warrant reprioritization.

Cost Estimating

- Create a web-based "cost estimating toolbox" as a one-stop resource for bureau field staff to document cost assumptions, and include EPA's sources of information on the costs associated with mining sites.
- Frequently reevaluate and adjust cost estimates throughout cleanups.

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

THE INSPECTOR GENERAL

AUG 22 2005

MEMORANDUM

SUBJECT: EPA Practices for Identifying and Inventorying Hazardous Sites Could Assist Similar Department of the Interior Efforts
Report No. 2005-P-00020

TO: Thomas P. Dunne
Acting Assistant Administrator
Office of Solid Waste and Emergency Response

This memorandum transmits a final evaluation report entitled *EPA Practices for Identifying and Inventorying Hazardous Sites Could Assist Similar Department of the Interior Efforts* conducted by the Office of Inspector General (OIG) of the United States Environmental Protection Agency (EPA). We conducted this work as part of a joint effort with the Department of the Interior (DOI) OIG. DOI-OIG examined whether the Department has effective processes to identify and prioritize hazardous waste sites on DOI land. Given EPA's experience with related activities through the Agency's implementation of Superfund, we examined EPA's process for identifying, prioritizing, and tracking hazardous waste sites. Further, we identified several EPA practices that could benefit DOI's effort to inventory and assess hazardous sites.

We appreciate the cooperation and assistance provided by your staff in completing this work. Our final report incorporates the majority of changes suggested in your January 27, 2005 official comments. If you or your staff has any questions regarding this report, please contact me at (202) 566-0847, or Kwai Chan, Assistant Inspector General for Program Evaluation, at (202) 566-0827.

Nikki L. Tinsley

Attachment

cc: Johnsie Webster, Audit Followup Coordinator, OSWER
Kwai Chan, Assistant Inspector General for Program Evaluation, OIG

Melissa Heist, Assistant Inspector General for Audit, OIG
Eileen McMahon, Assistant Inspector General for Congressional and Public Liaison, OIG
Michael Binder, Acting Assistant Inspector General for Planning, Analysis, and Results, OIG
Elizabeth Grossman, Deputy Assistant Inspector General for Program Evaluation, OIG
Carolyn Copper, Director for Program Evaluation, OIG

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Introduction

Background

Citizen concern over the extent of abandoned hazardous waste sites led Congress to pass the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or "Superfund") in 1980 to locate, investigate, and clean up the worst sites nationwide. The Environmental Protection Agency (EPA) has over 20 years experience with information systems and processes to identify, assess, prioritize, and estimate costs of hazardous waste sites through the Agency's implementation of the Superfund program.

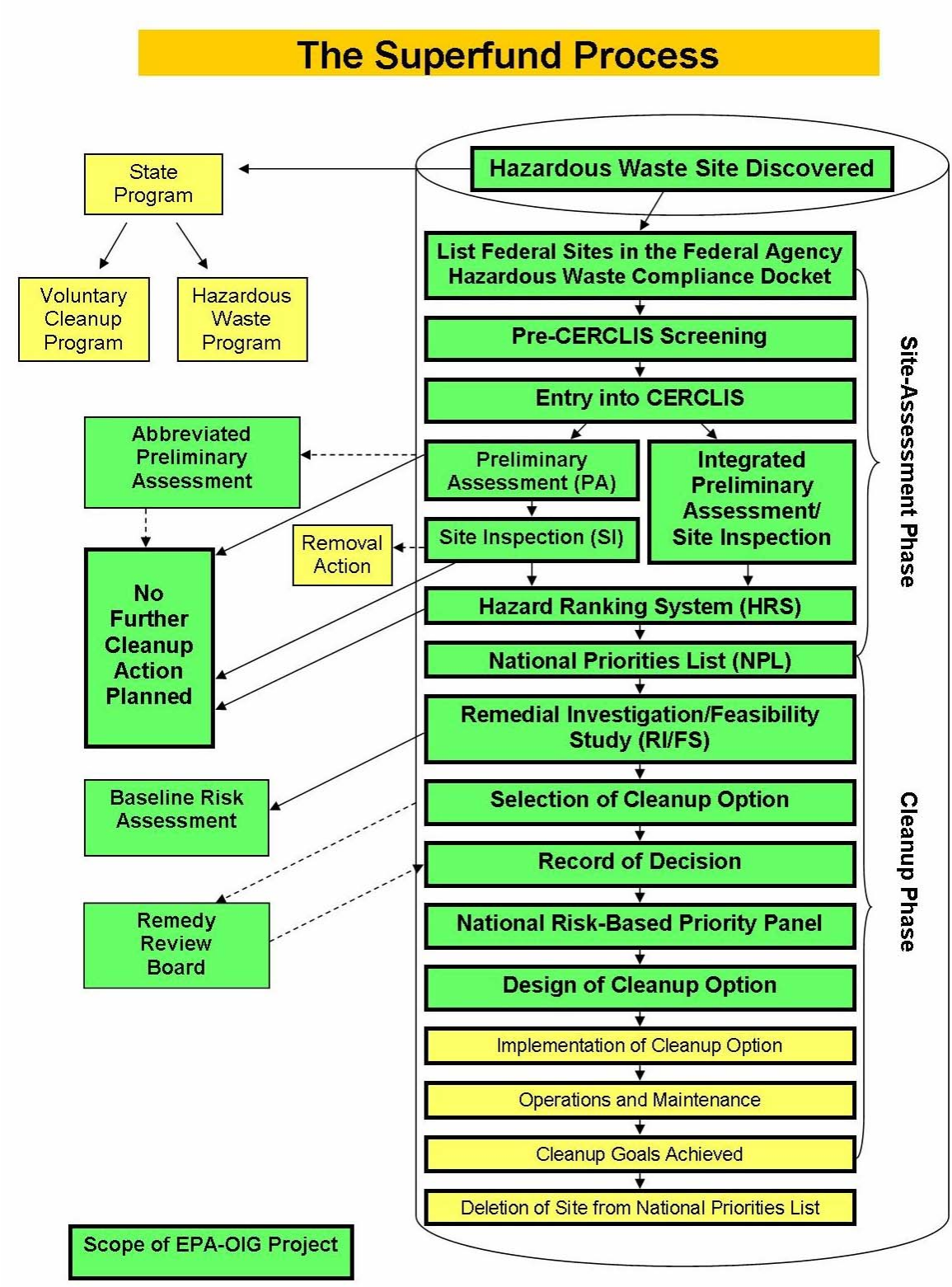
As part of accomplishing its objectives, EPA coordinates with other Federal land managers, such as the Department of the Interior (DOI). DOI manages one-fifth of the land mass in the United States, and DOI's stewardship responsibilities include inventorying and assessing sites on its land that pose threats to human populations, wildlife, and sensitive environments. Recent financial audits criticized DOI for weaknesses in its controls over environmental liabilities resulting from hazardous waste sites. DOI's Office of Inspector General (OIG) initiated an audit of DOI's efforts to identify, track, and prioritize hazardous sites on its lands, and reviewed DOI's efforts to develop a database for reporting financial liabilities.

Given the maturity of EPA's hazardous waste program and the Agency's experience and lessons learned, we worked jointly with DOI-OIG to review and summarize EPA's Superfund process and identify promising practices for DOI related to site discovery, assessment and prioritization, and cost estimating. While DOI does not seek to create its own Superfund program, similarities exist between EPA's process of designating priority sites for Federal action and the processes DOI should use to identify, assess, and prioritize hazardous sites on its land. Like in EPA Regions, DOI field staff conduct initial site activities and prepare initial cost estimates.

Purpose

DOI-OIG's objective asked, "Does the Department have effective processes to identify, track, and prioritize hazardous sites?" EPA-OIG's objective under this joint effort asked, "What is EPA's process for identifying, prioritizing, and tracking hazardous waste sites, and what practices do EPA staff apply that could benefit DOI's effort to inventory hazardous sites?"

The body of the report contains summary information on EPA practices, as well as promising practices that DOI can use. The flowchart on page 2 depicts EPA's Superfund process as well as the scope of our evaluation, and Appendix A provides additional details on our scope and methodology. Appendices B through D provide further details on EPA's process, and include various website links that DOI and others may find useful.


The Superfund Process
State Program
Voluntary Cleanup Program
Hazardous Waste Program
Hazardous Waste Site Discovered
List Federal Sites in the Federal Agency Hazardous Waste Compliance Docket
Pre-CERCLIS Screening
Entry into CERCLIS
Abbreviated Preliminary Assessment
Preliminary Assessment (PA)
Integrated Preliminary Assessment/ Site Inspection
Removal Action
Site Inspection (SI)
No Further Cleanup Action Planned
Hazard Ranking System (HRS)
National Priorities List (NPL)
Remedial Investigation/Feasibility Study (RI/FS)
Baseline Risk Assessment
Selection of Cleanup Option
Record of Decision
Remedy Review Board
National Risk-Based Priority Panel
Design of Cleanup Option
Implementation of Cleanup Option
Operations and Maintenance
Cleanup Goals Achieved
Deletion of Site from National Priorities List
Site-Assessment Phase
Cleanup Phase
Scope of EPA-OIG Project

EPA's Site Discovery, Assessment and Prioritization, and Cost Estimating Processes Under Superfund

Site Discovery

The core of EPA's Superfund process includes a system of prioritization that allows EPA to address the most dangerous sites and releases. Identifying abandoned or uncontrolled hazardous waste sites represents the first step in the process. EPA identifies sites through a variety of methods, including reviewing information provided by concerned citizens and records maintained by State and local agencies. States usually discover and report new sites to EPA. EPA regional staff conducts prescreening, often in conjunction with a State agency, to verify the presence of hazardous substances and evaluate whether the site falls under an existing EPA or State program. Citizens interested in referring a site may submit a formal petition available on EPA's website. Regional Remedial Decision Teams meet monthly to discuss emergency removal sites, and the monthly discussions often include new site information.

Regions screen new sites to assure that they place only appropriate sites into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), the Agency's database of sites that may require Federal cleanup action under Superfund. Pre-CERCLIS screening varies among Regions, but typically involves reviewing existing facility files at State agencies or county health departments, and conducting site visits to visually determine the proximity of sites to residential population centers and a site's draining, fencing, and unique characteristics. Pre-CERCLIS screening helps determine whether a site warrants evaluation through the site assessment and priority listing process. While CERCLIS contains approximately 50,000 sites, roughly 1,500 appear on EPA's priority list for Superfund action. CERCLIS generates a one-page decision form that regional reviewers sign, date, and file.

For Federal facilities, site discovery represents the date EPA formally adds the site to the Federal Agency Hazardous Waste Compliance Docket indicating the site requires Federal involvement. To document new Federal facility site information, Regions maintain pre-remedial file rooms that house CERCLIS decision forms, assessments, and other documents submitted by Federal facilities, such as required Resource Conservation and Recovery Act (RCRA) release notification forms for those agencies that generate, transport, treat, store, or dispose of hazardous waste.

While EPA continues to discover new sites, its heavy reliance on States for site discovery information could lead to "blind spots." To account for this limitation, EPA applies innovative target- and industry-based approaches to more proactively identify potential sites, such as by examining ground water sources and industrial sectors.

See Appendix B for more information on site discovery.

Site Assessment and Prioritization

When EPA identifies a site, it performs a preliminary assessment to distinguish between sites that pose little or no threat to human health and the environment and those that require further investigation. Preliminary assessments (PAs) and site inspections (SIs) identify sites qualified to enter the priority listing process. EPA scores sites for priority listing based on the likelihood of release or potential release, the characteristics of site waste, and the people or sensitive environments affected by the release. Once EPA designates a site as a priority for Federal action and funding, EPA conducts a remedial investigation to determine the nature and extent of contamination through sampling analysis and risk assessment. Specifically:

- The PA represents the first phase of the cleanup process following site discovery. Regions should attempt to complete PAs at non-Federal facility sites within 1 year of site discovery. Federal facility sites listed on EPA's Federal Agency Hazardous Waste Compliance Docket must complete a PA within a "reasonable schedule" and submit the PA to EPA for review. While EPA requires certain information to complete a PA, the Agency recognizes the need for flexibility to tailor information gathering to site-specific needs.

- EPA's determinations often require a more detailed SI. Investigators conducting SIs typically collect samples to determine the presence of hazardous substances.

EPA encourages Regions to combine PA and SI activities, or conduct integrated assessments, to reduce costs and repetitive tasks. To assist other Federal agencies, EPA plans to issue succinct Federal facility PA and SI summary guides in early 2005, and launch a web-based Federal facilities compliance assistance center on hazardous site cleanup. While the PA and SI guides will not replace specific statutory requirements, they could serve as one-stop guides to assist other Federal agencies and help focus their site activities.

The PA/SI process identifies sites qualified to enter the priority listing process and enables EPA to gather data needed to score the site according to the Hazard Ranking System (HRS). The HRS is a numerically-based screening system to assess the relative potential of sites to pose a threat to human health or the environment. Through HRS screening, EPA scores sites from 0 to 100 based on the likelihood that a site has released or has the potential to release contaminants into the environment, the characteristics of the waste, and the people or sensitive environments affected by the release. Sites with an HRS score of 28.5 or greater are eligible for EPA's priority list of sites requiring action.

EPA scores four pathways under the HRS: groundwater; surface water; soil exposure; and air migration. Site teams may use electronic scoring systems that provide user-friendly methods of documenting scores, minimizing mathematical scoring errors, and facilitating decision-making.

Once EPA designates a site as a priority for Federal action and funding, EPA conducts a Remedial Investigation and Feasibility Study (RI/FS) to determine the nature and extent of contamination through site characterization and risk assessment, and to determine cleanup options. The RI serves as the mechanism for collecting data to:

- Characterize site conditions;
- Determine the nature of the waste;
- Assess risk to human health and the environment; and
- Conduct testing to evaluate the potential performance and cost of the treatment technologies under consideration.

The FS serves as the mechanism for the development, screening, and detailed evaluation of alternative cleanup actions. EPA conducts the RI/FS process concurrently – RI data influence the development of cleanup alternatives in the FS, which in turn affects the scope of additional studies and field investigations. According to EPA, this phased approach encourages the continual scoping of site characterization, minimizes the collection of unnecessary data, and maximizes data quality. EPA requires a baseline risk assessment for all listed sites that identifies the existing or potential risks that sites may pose to human health and the environment. Because the baseline risk assessment identifies the primary health and environmental threats at a site, it also provides valuable input to the development and evaluation of alternatives during the FS.

Once EPA develops potential cleanup alternatives, the Agency screens certain options to reduce the number of alternatives for analysis. EPA evaluates cleanup alternatives with respect to nine criteria. EPA considers the first two criteria as "threshold" criteria; the next five as "balancing" criteria; and the last two as "modifying" criteria. Specifically:

Nine Criteria for Evaluating Cleanup Alternatives	
Threshold Criteria	1. Overall protection of human health and the environment 2. Compliance with applicable or relevant and appropriate requirements
Balancing Criteria	3. Long-term effectiveness and permanence 4. Reduction of toxicity, mobility, or volume 5. Short-term effectiveness 6. Implementability 7. Cost
Modifying Criteria	8. State acceptance 9. Community acceptance

EPA analyzes cleanup alternatives individually against each criterion and then compares each alternative against the others to determine each alternative's strengths and weaknesses. After EPA selects a cleanup option for sites listed in the Superfund National Priorities List (NPL), EPA's National Risk-Based Priority Panel evaluates the risk posed at listed sites to establish funding priorities for new cleanups. The Priority Panel applies

five criteria and associated weighting factors to classify threats at a site and to compare sites based on common criteria. The five criteria are:

Five Criteria for Classifying Threats
1. Risks to human population exposed 2. Contaminant stability 3. Contaminant characteristics 4. Threat to a significant environment 5. Program management considerations

EPA also uses its National Remedy Review Board, comprised of Headquarters and regional staff, to review cleanup options to ensure consistency with hazardous waste regulations.

See Appendix C for more information on site assessment and prioritization.

Cost Estimating

Recognizing that unique and changing site circumstances require flexibility in estimating costs for cleanup, EPA estimates costs throughout the cleanup process. Very little cost estimating occurs during the site discovery phase; rather, EPA's cost estimating process begins during the RI/FS phase, after EPA adds a site to its prioritized list for action but prior to actual cleanup. For most cost estimates developed during this phase, EPA relies on anecdotal and empirical data from past sites. Regional project managers do not document historic project costs; rather, they estimate initial costs and ask other site teams about their cost experiences.

When selecting the most suitable cleanup option, EPA uses screening-level cost estimates to screen out disproportionately expensive alternatives. The screening process evaluates cleanup alternatives with respect to their effectiveness, implementability, and cost; EPA does not carry forward higher cost alternatives. Cost functions as one of five "balancing" criteria used to assess cleanup alternatives. While EPA balances the reasonableness of the cost when evaluating cleanup options, cost does not predominate over other factors, such as long-term reliability. EPA's National Remedy Review Board helps to control response costs and promote nationally consistent and cost-effective cleanup decisions. This Board reviews proposed cleanup actions expected to cost more than $30 million ($75 million for Department of Energy sites with radioactive waste as the primary contaminant). The Agency estimates a +50% to -30% accuracy rate for cost estimates performed during EPA's detailed analysis of cleanup alternatives. Once EPA completes the final cleanup design, cost estimate accuracy narrows to a +15% to -10% range, as costs still change along the tail end of the process.

When estimating the costs of cleanup options, EPA estimates technical and contractor costs, and also estimates the construction costs necessary to implement the selected cleanup option.

- **Technical and contractor costs:** First, EPA estimates the costs of technical support through an Independent Government Cost Estimate (IGCE) conducted in-house by EPA staff for each work assignment at a site. Work assignments represent a specific step, or several steps, in EPA's site prioritization process, such as PAs and SIs following site discovery, or work assignments pertaining to actual cleanups. The IGCE should represent a "fair and reasonable" cost of doing the work, and the IGCE provides the work assignment manager with information about how much it will cost for a contractor to complete a cleanup activity. Since most EPA Regions lack in-house cost estimators, EPA issued a memorandum in June 2004 to assist work assignment managers in the preparation of IGCEs. EPA also provides regional staff an Internet-based "Cost Estimating Toolbox" that includes guidance documents and worksheets to help project managers prepare site-specific IGCEs and document assumptions made in the preparation of cost estimates.

- **Construction costs:** EPA conducts the second type of cost estimate after the Agency selects a cleanup option that meets statutory and regulatory requirements. EPA uses outside contractors to prepare detailed estimates of the cost to construct the selected cleanup action. Contractors base construction cost estimates on the type and quantities of labor, equipment, and materials required to perform the work. EPA recommends that its project managers obtain third-party review of construction cost estimates prior to advertising for bids. EPA documents each cost estimate for the different cleanup phases in CERCLIS. EPA participates in an interagency cost estimating workgroup comprised of other Federal agencies that, with the exception of EPA, have in-house cost estimating expertise.

See Appendix D for more information on cost estimating.

Promising Practices

Promising Practices for the Department of the Interior

Based on DOI-OIG's audit findings and its assessment of DOI's capacity to implement EPA's promising practices, we identified the following practical improvements for DOI's effort to inventory hazardous waste sites. The tables below show DOI-OIG audit findings and our observations on areas for improvement on site discovery, site assessment and prioritization, and cost estimating.

Site Discovery	***DOI-OIG Audit Finding:***
	DOI does not have a proactive process to identify hazardous waste sites. Audit work conducted by the DOI-OIG team found that three of four bureaus lacked a proactive site identification program and often only recorded sites after the public identified them.
	Promising Practices:
	✓ DOI should examine existing site inventories and work with States, Tribes, and communities to obtain information to identify potential sites. Also, existing DOI inspection programs (e.g., oil and gas; mining; natural resource damage assessments) can likely generate new site information. Working with States and communities would ensure that DOI utilizes local individuals who know the contamination problems and geography of an area. DOI staff should consider talking to community members – perhaps former employees of industries unique to certain areas – who may have information about potential sites.
	✓ DOI should develop and apply user-friendly checklists and templates to gather initial site information and generate consistency among field staff. DOI should consider EPA's checklists and templates as a source of ideas for developing its own forms. Samples of EPA templates include Internet-based public petitions for new site information, and site screening checklists and decision forms.
	✓ DOI should examine upcoming EPA guidance, including succinct guides on PAs and SIs, and a web-based hazardous waste compliance assistance center for Federal facilities, as DOI develops its own procedures to ensure the procedures meet minimum requirements for PAs and SIs at Federal facilities. See http://www.epa.gov/compliance/about/offices/ffeo.html.

Site Assessment and Prioritization	***DOI-OIG Audit Finding:***
	DOI does not have a proactive process to evaluate the risks posed by hazardous waste sites to human health, wildlife, and the environment. The Department does not prioritize and rank all of its hazardous waste sites. The four DOI bureaus audited maintain some information regarding prioritization of hazardous waste sites on bureau land, but the information is not complete or comparable. The DOI-OIG team found that bureaus developed varying methods for establishing priorities and making funding decisions for contaminated site mitigation.
	Promising Practices:
	✓ DOI should develop and apply easy-to-follow automated tools to quickly assess potential sites and provide uniformity across bureaus. DOI should consider EPA's automated tools as a source of ideas. EPA's automated tools include: • HRS Superscreen – Allows users to enter and evaluate site-specific information, including sampling data, waste quantities, physical parameters, and target data; enter descriptive narrative text and reference citations; and select specific HRS factor values. • HRS Quickscore – Provides users pathway and site score calculations; HRS score sheet preparation and printing; identification of data gaps; and scratchpad capability for note-taking.
	✓ DOI should develop a risk-based method to prioritize sites and apply an approach that ranks sites based on current and future land uses, ecological risks, and tribal factors/cultural considerations. • DOI sites on Bureau of Indian Affairs land should focus on ecological risks such as food chain contamination, bioaccumulation, and fish consumption/utilization for tribal cultures. • DOI should consider obtaining site assessment information from States and Tribes regarding sites DOI holds in trust.
	✓ DOI should develop a tracking mechanism for sites DOI sets aside as not requiring cleanup attention. DOI should work with States, Tribes, and communities to stay aware of changing site conditions that warrant reprioritization of already screened sites.

Cost Estimating	***DOI-OIG Audit Finding:***
	Four DOI bureaus did not adequately support cost estimates for 108 of the 125 (or 86 percent) site files reviewed. Some bureaus reported estimates that officials could not explain. Additionally, for the 125 site files evaluated by the DOI-OIG team, 103 (or 82 percent) did not have supporting documentation to justify the financial liability code selected. As a result, DOI and its bureaus may not have reliable data for management purposes or financial reporting.
	Promising Practices:
	✓ DOI should create a web-based "cost estimating toolbox" as a one-stop resource of guidance and worksheets for staff to document assumptions. This could include EPA's information on the costs and environmental liabilities related to mining.
	✓ DOI should reevaluate and adjust cost estimates at each stage of the cleanup process. Cost estimating should include flexibility to account for uncertainty in changing site conditions between discovery and actual cleanup. DOI's cost estimating process should include a feedback loop to adjust the first round of cost estimates.

Appendix A

Scope and Methodology

In collaboration with the DOI-OIG, we summarized EPA's process of discovering, assessing, and prioritizing hazardous waste sites for cleanup to identify promising practices for DOI's effort to inventory hazardous sites on land it manages. We conducted our evaluation of EPA's Superfund remedial program (we omitted from our scope processes related to EPA's emergency removal program) between April 2004 and December 2004. We performed our evaluation in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States.

Evaluation Methodology

To gain an understanding of EPA's Superfund site discovery, site assessment and prioritization, and cost estimating processes, and to identify promising practices for DOI, we reviewed policies and guidance documents available on EPA's Superfund website, including:

- Preliminary Assessment and Site Inspection Information
- Site Assessment Fact Sheets
- Quick Reference Guidance "Improving Site Assessment: Abbreviated Preliminary Assessments" (October 1999)
- Quick Reference Guidance "Improving Site Assessment: Combined PA/SI Assessments" (October 1999)
- Risk Assessment Task Force Staff Paper "An Examination of EPA Risk Assessment Principles and Practices" (March 2004)
- Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions (April 22, 1991)
- Overview of the National Risk-Based Priority Panel
- A Guide to Developing and Documenting Cost Estimates During the Feasibility Study (July 2000)
- Superfund: Building on the Past, Looking to the Future ("120-Day Study") (April 22, 2004)
- Superfund Reforms Initiative
- "Introduction to the HRS" and the "HRS Toolbox"
- HRS Superscreen and Quickscore
- Quick Reference Fact Sheet "The Revised Hazardous Ranking System Qs and As" (November 1990)
- January 9, 1996 Memorandum on "Remedial Action Priority Setting"
- Superfund Hotline Training Module "Introduction to: The Superfund Response Process" (updated February 1998)
- Superfund Program Implementation Manual: Fiscal Year 2004/2005 (April 7, 2003)
- Remedial Investigation and Feasibility Study Information
- Fact Sheet "The Role of Cost in the Superfund Remedy Selection Process" (September 10, 1996)
- Memorandum "Cost Estimating Resources for the Superfund Program" (June 1, 2004)

We conducted literature searches on EPA and DOI hazardous waste activities and related promising practices. We reviewed prior audits and evaluations on each agency's hazardous waste programs written by our office and the Government Accountability Office, as well as reports written by:

- Resources for the Future
- National Advisory Council for Environmental Policy and Technology
- Environmental Law Institute
- Association of State and Territorial Solid Waste Management Officials

We interviewed officials from EPA Headquarters and regional offices for policy implementation information and to identify promising practices for DOI. In Headquarters, we met with:

- Associate Chiefs with EPA's lead office for managing the Superfund program and for providing regional support from site discovery through site prioritization
- Two members, including the Chairperson, of EPA's National Risk-Based Priority Panel responsible for prioritizing new site funding based on the risks posed by sites
- Directors of EPA's offices responsible for restoration, reuse, enforcement, and compliance at Federal facility hazardous waste sites
- Member of EPA's Environmental Response Team responsible for ecological risk assessment
- Two members of EPA's National Remedy Review Board that reviews cleanup options, helps control costs, and promotes consistent and cost-effective cleanup decisions
- Contract Manager and U.S. Army Corps of Engineers Liaison within EPA's lead Superfund office
- Staff responsible for science policy within EPA's lead Superfund office
- Chief overseeing EPA's automated inventory of hazardous waste sites

To obtain a regional perspective of Superfund implementation and identify practices relevant for the DOI field staff who conduct hazardous site activities, we interviewed staff in Regions 2, 8, 9, and 10 responsible for initial site discovery; site assessment and risk assessment; HRS scoring and the NPL process; and Federal facilities coordination. We judgmentally selected Regions 2, 8, 9, and 10 based on discussions with EPA staff. We also met with one of the co-chairs of EPA's National Mining Team, who described the team's involvement with DOI.

Limitations

We did not comprehensively evaluate EPA's Superfund program implementation; rather, we identified useful practices – if implemented effectively – for DOI's effort to inventory hazardous waste sites on land the Department manages. Because we could not determine whether the Superfund processes described in our report work exceptionally well or are widely recognized over other approaches, we refer to them as promising practices rather than best practices.

DOI-OIG Work

Concurrent with our evaluation, DOI-OIG staff audited DOI's processes to identify, track, and prioritize hazardous sites. DOI-OIG identified and evaluated the policies and procedures used by DOI and its bureaus to inventory and prioritize hazardous sites. DOI-OIG also conducted field visits to evaluate supporting documentation for reported financial liability codes and cost estimates for hazardous sites. DOI-OIG interviewed officials at the Department and bureau levels, and at field and regional offices. DOI-OIG attempted to reconcile the Department's list of contaminated sites to the Federal Agency Hazardous Waste Compliance Docket, maintained by EPA, to determine whether the Docket contained sites that the bureaus had not reported to the Department. DOI-OIG conducted its review from February 2004 to March 2005. DOI-OIG used fiscal 2003 data as the baseline for its review. The scope of DOI-OIG's audit covered Federal lands under the management of the Department and excluded physical hazards, currently operating sanitary landfills, transportation, storing, and handling of hazardous materials, current operations at Department facilities, and identification of actual or potential contamination on lands newly acquired or to be acquired.

Appendix B

EPA's Site Discovery Process

EPA has several mechanisms in place to discover new hazardous waste sites. EPA's relationships with both State officials and regional Remedial Decision Teams have proven useful in obtaining new site information. Consistent definitions of "hazardous substances" helps EPA staff communicate with these groups to obtain information on new sites that might pose a threat to human health or the environment. EPA extensively screens new sites before including them in the Agency's automated inventory and priority list of sites that require further Federal action. EPA's screening efforts include coordinating with other EPA and State program offices to determine their level of awareness and activity at a certain facility. EPA also applies automated screening tools and templates to assist regional staff in assessing and inspecting sites for further action. Additionally, regional EPA offices apply innovative approaches to identifying hazardous waste sites in certain industrial sectors.

Hazardous wastes and substances addressed by EPA possess at least one of the following four characteristics: ignitability, corrosivity, reactivity, or toxicity. The core of EPA's process to assess sites for Federal action includes a system of identification and prioritization that allows EPA to address the most dangerous sites and releases. Identifying abandoned or uncontrolled hazardous waste sites represents the first step in the process. EPA identifies sites through a variety of methods, including reviewing information provided by concerned citizens and records maintained by State and local agencies, such as facility bankruptcy filings with county tax assessor's offices, and insurance maps that show historical site information. Hazardous waste regulations require facilities to report releases of certain chemicals and provide information about hazardous substances used at facilities. EPA may discover releases of hazardous substances through various means, including:

- Mandatory notification under CERCLA §103(a) or (c);
- CERCLA §104(e) investigations for "information gathering and access" if there is a "reasonable basis to believe there may be a release or threat of release of a hazardous substance or pollutant or contaminant";
- Required RCRA §3005 and §3010 release notification, which mandates that any person generating, transporting, treating, storing, or disposing of hazardous waste notify EPA and describe the location, site activities, and hazardous waste handled at the facility;
- Inventory efforts or random observation by government agencies;
- Formal citizen petitions pursuant to 40 Code of Federal Regulations §300.420(b)(5), which reads, "Any person may petition the lead Federal agency to perform a preliminary assessment of a release when such person is, or may be, affected by a release of a hazardous substance, pollutant, or contaminant. Such petitions shall be addressed to the EPA Regional Administrator for the Region in which the release is located, except that petitions for preliminary assessments involving Federal facilities should be addressed to the head of the appropriate Federal agency";
- Review of State and Federal records to determine whether facilities fall under other environmental programs such as RCRA; and
- Informal community observation and notification.

Among all of these methods, States usually discover and report new site information to EPA. State hazardous waste site inventory lists have proven helpful for EPA's site discovery efforts. EPA regional staff conducts prescreening, often in conjunction with a State agency, to verify the presence of hazardous waste substances and to evaluate whether an existing EPA or State program covers the site. According to regional EPA staff, the Agency rarely receives new site information through informal referrals; rather, those citizens interested in referring a site may submit a formal petition available on the Agency's website and included as Example B-1 in this appendix. For example, Region 10 receives about 3 to 4 citizen petitions a year, although 1 petition can pertain to multiple sites (we noted 1 petition that pertained to 10 sites). Additionally, regional Remedial Decision Teams meet monthly to discuss emergency removal sites and often the monthly discussions include new site information. For example, Region 10 uses Remedial Decision Teams to decide how to proceed with a particularly sensitive site after regional staff internally review State reports on new sites. Region 9 applies an approach similar to the Remedial Decision Team meetings utilized in Regions 2, 8, and 10. As part of cooperative agreements, Region 9 staff meet with representatives from States and Tribes at least three times a year to discuss work plans, emerging high priority sites, and what programs would best address new sites.

Regions screen new sites to assure that they place only appropriate sites into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), the Agency's database of sites that may require Federal cleanup action. Pre-CERCLIS screening varies from Region to Region but typically involves reviewing existing facility files at State agencies or county health departments, and conducting site visits to visually determine the proximity of the site to residential population centers and the site's draining, fencing, and unique characteristics. Region 2 has found it useful to have its States complete the "NPL Data Characteristics Form" – a qualitative questionnaire created electronically through HRS Superscreen (available on EPA's site assessment web page) and included as Example B-2. HRS Superscreen provides a user-friendly, Windows-based method to facilitate site inspection reporting and decision-making. Often, Region 8 staff will collect topsoil samples as part of pre-CERCLIS screening, and one State in Region 8 prepares a pre-CERCLIS screening report complete with a site decision-making form, included as Example B-3. In Region 9, States and Tribes complete pre-CERCLIS screening checklists and submit the checklists to Region 9 staff as deliverables under cooperative agreements. Two Region 10 States (Oregon and Washington) complete site screening forms that include strategy recommendations for how best to address the site, and Oregon also uses a site assessment prioritization system to assess and score site threats.

Pre-CERCLIS screening helps EPA determine whether a site qualifies for a response action under Superfund and warrants evaluation through the site assessment and priority listing process. Prior to conducting pre-CERCLIS screening, EPA previously entered all sites – including emergency removals – into CERCLIS. According to EPA staff, States now attach the stigma previously associated with the Agency's priority list with listing sites in CERCLIS and the Federal Agency Hazardous Waste Compliance Docket. While EPA's CERCLIS inventory contains approximately 50,000 sites, roughly 1,500 sites appear on the Agency's priority list for Federal action.

EPA requires that CERCLIS data comply with standards established by the Environmental Data Standards Council. The Council develops environmental data standards to promote the exchange of information among EPA, States, and Tribes. The Council creates documented agreements on representations, formats, and definitions of common data. The Council intends the data standards to improve the quality and share-ability of environmental data by increasing data compatibility, improving the consistency and efficiency of data collection, and reducing data redundancy by providing a "common vocabulary" for all interested stakeholders. EPA requires that any data submitted to the Agency comply with these standards.

For non-Federal facilities, the site discovery date in CERCLIS represents the date EPA regional staff complete pre-CERCLIS screening activities and documents the decision that the site warrants assessment and potential listing and cleanup attention. In addition to CERCLIS data entry, Region 2 documents new site information in a "Superfund New Site Assignment Form" (see Example B-4). One Region uses contractors to enter new site information into CERLCIS, while another has site assessment managers enter initial site discovery information into CERCLIS. CERCLIS generates a one-page printed decision form that regional reviewers sign, date, and file. For Federal facilities, the site discovery date represents the date EPA formally adds the site to the Federal Agency Hazardous Waste Compliance Docket indicating that the site requires Federal involvement. To document new Federal facility site information, Regions maintain pre-remedial file rooms that house CERCLIS decision forms, preliminary assessments, and other documents submitted by Federal facilities, such as required RCRA and CERCLA release notification forms for those Federal agencies that generate, transport, treat, store, or dispose of hazardous waste.

EPA continues to discover new sites; however, EPA's heavy reliance on States for site discovery information could lead to "blind spots." To account for this limitation, EPA Regions apply innovative target- and industry-based approaches to identifying new hazardous waste sites. For example, Regions 2 and 9 apply target-based approaches where they begin by sampling drinking water supplies or contaminated groundwater plumes and backtrack to locate the facility or source of contamination. This unique approach differs from the usual practice of tracking contamination from the source facility to the point of eventual release. Regions 2 and 8 also utilize industry-based site discovery programs that focus on certain industrial sectors. For example, one Region 8 State identifies potential sites by tracking groundwater releases of volatile organic compounds from the dry cleaning sector. Region 9 has site discovery initiatives on perchlorate, as well as vapor intrusion into homes from contaminated soils. One Region 10 State reviews lists and maps of impaired waters, applies overlay maps to identify industrial sectors, conducts sampling, and backtracks to identify sources of contamination.

Example B-1

SAMPLE PUBLIC PETITION FORMAT

(Regional Administrator)
United States Environmental Protection Agency
Region (Insert proper Region number)

-or-

(Administrator)
(Federal Agency)
(local address)

[Instructions in brackets can be replaced with relevant information, and the brackets deleted.]

Under the authority of CERCLA Section 105 (d), as amended, the petitioner,

(Name) : _____

(Address) : _____

(Telephone Number) : _____

hereby requests that Region ***[(insert number of U.S. EPA Region in which release/threatened release is located from list provided in the bulletin) of the United States Environmental Protection Agency (or) (name of appropriate Federal agency, in the case of a suspected release/potential release from a Federal facility)]*** conduct a preliminary assessment of the suspected ***[release (or) threatened release]*** of a hazardous substance, pollutant, or contaminant at the following location:

(Precise description of the location of the release/threatened release: attach marked map if possible)

_____

Petitioner is affected by the [release (or) threatened release] because:

(Describe as completely as possible how you are affected, or potentially affected,

_____

by the release/threatened release)

[The information requested below is not required but, to the extent that it can be included, it will expedite review of and response to your petition.]

Type or characteristics of the substance(s) involved:

_____

Nature and history of any activities that have occurred regarding the release/threatened release:

_____

_____

_____

State and local authorities you have contacted about the release/threatened release and the response, if any:

_____

_____

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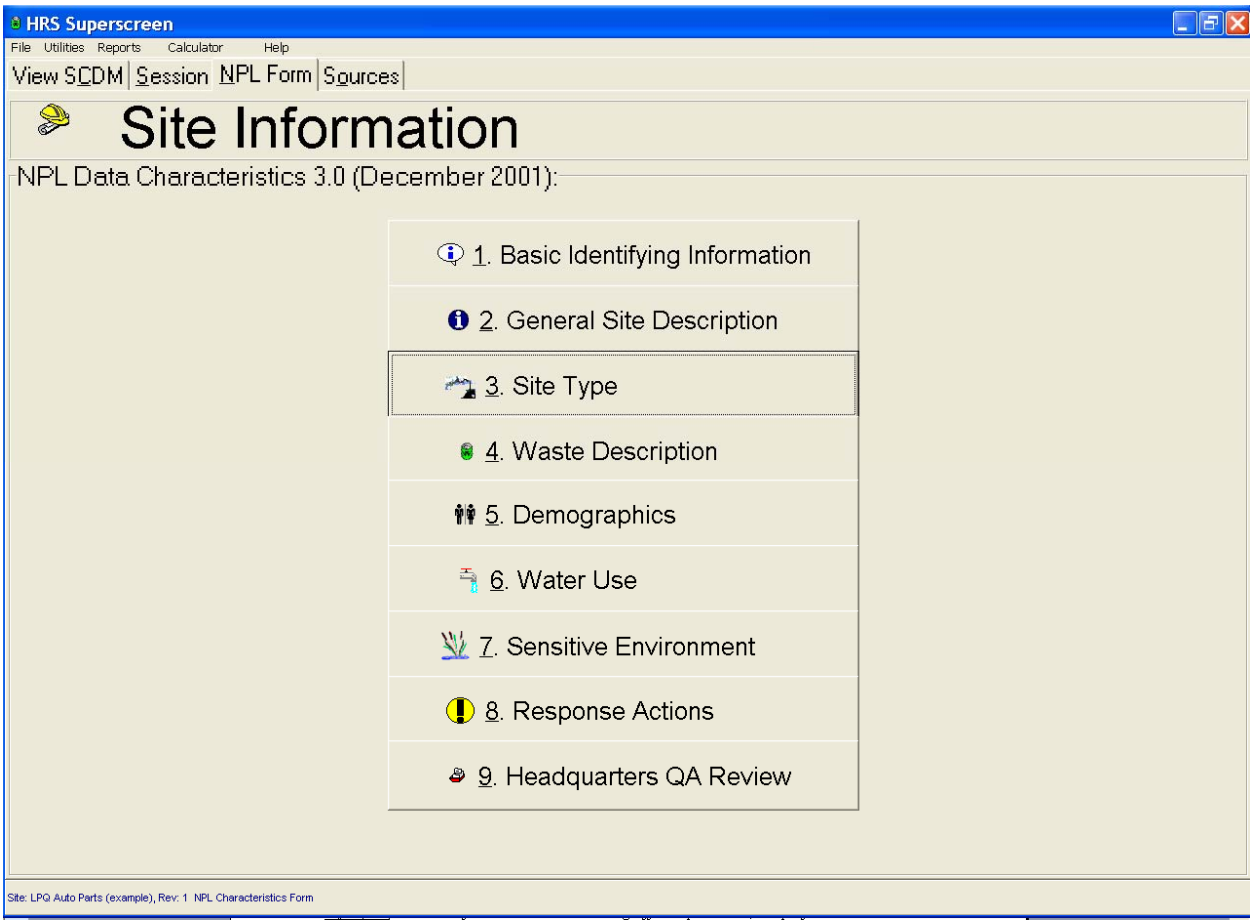
Example B-2

"NPL Data Characteristics Form" from HRS Superscreen



Example B-3

PRE-CERCLIS SCREENING ASSESSMENT CHECKLIST/DECISION FORM

This checklist can assist the site investigator during the Pre-CERCLIS screening. It will be used to determine whether further steps in the site investigation process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: _____ _____
(Name/Title) (Date)

_____ _____
(Address) (Phone)

_____
(E-Mail Address)

Site Name: _____

Previous Names (if any): _____

Site Location: _____
(Street)

_____ , _____ _____ - _____
(City) (ST) (Zip)

Latitude: _____ **Longitude:** _____

Complete the following checklist. If "yes" is marked, please explain below.		YES	NO
1.	Does the site already appear in CERCLIS?	☐	☐
2.	Is the release from products that are part of the structure of, and result in exposure within, residential buildings or businesses or community structures?	☐	☐
3.	Does the site consist of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?	☐	☐
4.	Is the release into a public or private drinking water supply due to deterioration of the system through ordinary use?	☐	☐
5.	Is some other program actively involved with the site (i.e., another Federal, State, or Tribal program)?	☐	☐
6.	Are the hazardous substances potentially released at the site regulated under a statutory exclusion (i.e., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?	☐	☐
7.	Are the hazardous substances potentially released at the site excluded by policy considerations (e.g., deferral to RCRA Corrective Action)?	☐	☐
8.	Is there sufficient documentation that clearly demonstrates that there is no potential for a release that could cause adverse environmental or human health impacts (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, documentation showing that no hazardous substance releases have occurred, EPA approved risk assessment completed)?	☐	☐

Please explain all "yes" answer(s), attach additional sheets if necessary: _____

Site Determination: ☐ Enter the site into CERCLIS. Further assessment is recommended (explain below).

☐ The site is not recommended for placement into CERCLIS (explain below).

DECISION/DISCUSSION/RATIONALE:

Regional EPA Reviewer: _____ _____

Print Name/Signature Date

State Agency/Tribe: _____ _____

Print Name/Signature Date

Example B-4

SUPERFUND
NEW SITE ASSIGNMENT FORM

CERCLIS EPA I.D. NUMBER: DISCOVERY DATE:

NAME OF FACILITY:

STREET: No street applicable CITY:

ZIP CODE: COUNTY: STATE :

AVAILABLE SITE TYPE MAIN CATEGORIES_____

AVAILABLE SITE TYPE MAIN SUBCATEGORIES_____

Please record Latitude/Longitude in decimal degrees. See http://www.fcc.gov/mmb/asd/bickel/DDDMMSS-decimal.html for conversions.

LATITUDE: _____ **Indicate "+" for Northern Hemisphere**

LONGITUDE_____ **Indicate "-" for Western Hemisphere**

NPL IND:___ FED FAC IND: __ NO FURTHER ACTION:___

SITE DESCRIPTION:

*NOTE: PLEASE KEEP SITE DESCRIPTIONS DOWN TO 70 WORDS OR LESS.(500 CHARACTERS)

OPERABLE UNIT ID: __ **EVENT LEAD**: _____ **EVENT TYPE**:_____

ACTUAL COMPLETION DATE: __/__/__

ACTUAL START DATE: _____ EVENT TYPE: __ __ __ (3)

Appendix C

EPA's Site Assessment and Prioritization Process

EPA evaluates the release of hazardous substances from a site through various steps in the cleanup process. When EPA identifies a site, EPA performs a preliminary assessment to distinguish between sites that pose little or no threat to human health and the environment and sites that require further investigation. Preliminary assessments (PAs) and site inspections (SIs) identify sites qualified to enter the priority listing process and provide the data needed for scoring according to EPA's Hazard Ranking System. EPA scores sites based on the likelihood of release or potential release, the characteristics of site waste, and the people or sensitive environments affected by the release. EPA uses a panel of experts to evaluate risks at sites on the Agency's priority list and to establish funding priorities for new cleanups. Once EPA designates a site as a priority for Federal action and funding, EPA conducts a remedial investigation to determine the nature and extent of contamination through sampling analysis and risk assessment.

EPA's formal site assessment process begins when the Agency first enters information about a release or potential release into its national inventory of hazardous waste sites, and continues through PAs, SIs, removal actions, and other activities. EPA's site assessment process ends either when the Agency determines No Further Remedial Action Planned (NFRAP), at which point site assessment stops and EPA archives site information, or when EPA decides to propose a site for listing on the National Priorities List (NPL), at which point the site assessment phase ends and the listing process begins. EPA does not track sites the Agency codes as "NFRAP"; rather, those sites fall to the responsibility of State agencies, and EPA places the onus on States to alert EPA to new information that can change the "NFRAP" status. Each of the following steps helps the Agency assess and prioritize hazardous waste sites. Throughout the process, EPA uses its community involvement program, as appropriate, to advocate and strengthen early and meaningful community participation during cleanups.

Preliminary Assessment/Site Inspection (PA/SI)

The PA represents the first phase of the site assessment process following site discovery. Regions should attempt to complete PAs at non-Federal facility sites within 1 year of site discovery. Regions usually conduct an abbreviated PA for sites entered into the CERCLIS inventory via site discovery at which no work has started and, based on limited review, do not warrant any type of additional activity. PAs consist of limited-scope investigations of readily available information about a site and its surrounding area. PAs generally include a review of Federal, State, and local government files, including facility bankruptcy documents, county tax assessor's records, permits required under RCRA, insurance maps with historic site information, and geological and hydrological data. Although not required, the process may include site visits to observe characteristics such as drainage patterns and proximity to residences, and institutional controls such as fencing.

According to EPA regional staff, while EPA requires certain information to complete a PA, the Agency recognizes the need for flexibility in the process to tailor information gathering to site-

specific needs. Often, regional EPA staff will conduct an abbreviated preliminary assessment when regional staffs have enough information to decide whether the site warrants further Federal action. Abbreviated preliminary assessments use the same information as the conventional PA approach, but rely on the professional judgment and past site assessment experience of regional staff to make decisions at earlier stages of the process.

To determine the types of threats the site might pose, EPA staff conduct detailed reviews or SIs. The SI process provides the data needed to score sites through the Hazard Ranking System (HRS) and identify potential sites for EPA's priority list of sites requiring Federal action and funding. SI investigators typically collect environmental release and potential source samples to determine the presence or migration of hazardous substances. Investigators conduct SIs in one stage or two. The first stage, or focused SI, tests hypotheses developed during the PA and can yield information sufficient to prepare an HRS scoring package. If investigators require further information to document an HRS score, they move to the second stage and conduct an expanded SI. EPA encourages Regions to combine PA and SI activities, or conduct integrated assessments, to reduce costs and repetitive tasks. Region 8 performs integrated assessments on a case-by-case basis for those sites that pose time-critical threats to nearby populations. Under cooperative agreements, Region 9 staff collectively work with States and Tribes to decide whether a site requires further assessment based on any indications that a release could impact human populations or sensitive environments. Region 9 staff said that Tribal cultural values often come into play when assessing sites, particularly with new routes of exposure not typically expected in suburban environments.

To assist the PA and SI efforts at other Federal agencies, EPA plans to issue succinct PA and SI summary guides specific to Federal facilities in early 2005, as well as launch a web-based Federal facilities compliance assistance center on hazardous site cleanup. While the PA and SI guides will not replace specific statutory requirements, they could serve as one-stop guides to assist other Federal agencies and help focus their site activities. Also, EPA conducts an annual national site assessment symposium as a forum for EPA, States, Tribes, and other Federal agencies to discuss recent and pending changes in legislation, funding, policies, and guidance. Speakers representing a broad site assessment spectrum share ideas and expertise on how to address evolving site assessment needs.

HRS Scoring

EPA applies information collected during the PA/SI process to calculate an HRS score, and EPA uses HRS scoring as the principal mechanism to place uncontrolled waste sites on its priority list for funding and action. The HRS consists of a numerically based screening system to assess the relative potential of sites to pose a threat to human health or the environment. The HRS assigns each site a score ranging from 0 to100 based on: the likelihood that a site has released or has the potential to release contaminants into the environment; the characteristics of the waste; and the people or sensitive environments affected by the release. Though not a risk assessment tool, the HRS uses a structured approach to assign numerical values to risk-based factors and conditions. EPA scores four pathways under the HRS:

1. Groundwater migration (drinking water);
2. Surface water migration (drinking water, human food chain, sensitive environments);
3. Soil exposure (resident population, nearby population, sensitive environments); and
4. Air migration (population, sensitive environments).

After calculating scores for one or more pathways, EPA combines the scores into an overall site score. Sites with an HRS score of 28.5 or greater are eligible for EPA's priority list of sites requiring Federal action. Site teams may use electronic scoring systems, such as HRS Superscreen and Quickscore, to calculate scores. Both systems provide user-friendly, electronic methods of documenting site scores, minimizing mathematical scoring errors, and facilitating decision-making. HRS Superscreen allows users to: enter and evaluate site-specific information, including sampling data, waste quantities, physical parameters, and target data; enter descriptive narrative text and reference citations; and select specific HRS factor values. Similar key functions in Quickscore include: pathway and site score calculations; HRS score sheet preparation and printing; easy identification of data gaps in a conceptual site model; and scratchpad capability for note-taking.

If all HRS pathways score low, the site scores low. However, the site can score relatively high even if only one pathway scores high. This demonstrates an important consideration for HRS scoring because some extremely dangerous sites pose threats through only one pathway. Also, HRS scores do not determine funding priorities because the information collected to develop HRS scores cannot sufficiently determine either the extent of contamination or the appropriate cleanup response for a particular site. Furthermore, the sites with the highest HRS scores do not necessarily come to EPA's attention first – this would require stopping work at sites with already underway cleanup actions. EPA relies on more detailed studies in the Remedial Investigation/Feasibility Study (RI/FS) process that typically follows site listing.

Remedial Investigation/Feasibility Study (RI/FS)

The RI/FS phase determines the nature and extent of contamination, and EPA performs an RI/FS after designating a site as a priority for Federal funding and action. The RI serves as the mechanism for collecting data to:

- Characterize site conditions;
- Determine the nature of the waste;
- Assess risk to human health and the environment; and
- Conduct testing to evaluate the potential performance and cost of the treatment technologies under consideration.

The FS serves as the mechanism for the development, screening, and detailed evaluation of alternative cleanup actions. EPA conducts the RI/FS process concurrently – data collected in the RI influence the development of cleanup alternatives in the FS, which in turn affects the scope of additional studies and field investigations. According to EPA, this phased approach encourages the continual scoping of site characterization, minimizes the collection of unnecessary data, and maximizes data quality. The RI/FS process includes the following phases: scoping, site

characterization, development and screening of cleanup options, treatability investigations, and detailed analysis.

Scoping

Scoping represents the initial planning phase of the RI/FS process, and EPA refines many of the planning steps begun during the scoping in later phases of the RI/FS. Scoping activities typically begin with the collection of existing site data, including data from previous investigations such as the PA/SI. On the basis of this information, EPA undertakes site management planning to: preliminarily identify boundaries of the study area; identify likely cleanup objectives and whether interim actions may be necessary or appropriate; and establish whether to address the site as one of several separate operable units. Once EPA agrees on an overall management strategy, EPA plans the RI/FS for a specific operable unit or the site as a whole. Typical scoping activities include: initiating the identification and discussion of potential Applicable or Relevant and Appropriate Requirements with the support agency; determining the types of decisions to make and the data needed to support these decisions; assembling a technical advisory committee to assist in activities, serve as a review board for important deliverables, and monitor progress during the study; and preparing the work plan, sampling and analysis plan, health and safety plan, and community relations plan.

Site Characterization

EPA initiates field sampling and laboratory analysis during the site characterization phase of the RI/FS. Preliminary site characterization summaries provide the lead agency with information early in the process before preparation of the full RI report. The summary helps determine the feasibility of potential technologies and assists both the lead and support agencies with the initial identification of applicable or relevant and appropriate requirements.

According to regional EPA staff, the Agency's site prioritization follows a risk-based process. EPA applies its Risk Assessment Guidance to develop electronic templates of standard risk assessment data reporting tables that provide clear, consistent, and transparent risk data presentations. The electronically transferred tables provide the summary-level risk data that EPA staff must enter into its automated inventory of hazardous waste sites. EPA requires a baseline risk assessment for all listed sites that identifies the existing or potential risks that sites may pose to human health and the environment.

Three types of risks may require site cleanups: human health cancer risks; human health non-cancer risks; or ecological risks. Because the baseline risk assessment identifies the primary health and environmental threats at a site, it also provides valuable input to the development and evaluation of alternatives during the FS. EPA uses the $1x10^{-6}$ (one in a million) to $1x10^{-4}$ (1 in ten thousand) cancer risk range as a "target range" to manage cleanup risks and as an acceptable risk range for cleanup levels. For human health threats, where the baseline risk assessment indicates that the lifetime cancer risk range to

an individual for either current or future land use exceeds $1x10^{-4}$, the site generally warrants further Federal action. Once EPA decides to commence cleanup action, the Agency has expressed a preference for cleanups achieving the more protective end of the risk range (i.e., $1x10^{-6}$). Site cleanup must also protect against non-cancer risks or threats, and generally should not result in a Hazard Index[1] greater than one. To justify site action based upon ecological concerns, an ecological risk assessment must establish that an actual or potential ecological threat exists at a site. Ecological risk assessments can have their greatest influence on risk management at a site in the evaluation and selection of cleanup options.

Development and Screening of Cleanup Options

This phase usually begins during scoping when EPA may first identify likely cleanup scenarios. Developing cleanup options requires:

- Identifying objectives;
- Identifying potential treatment technologies that will satisfy the objectives;
- Screening technologies based on effectiveness, implementability, and cost; and
- Assembling technologies into alternatives for the site or operable unit.

EPA can develop cleanup options to address a contaminated medium, a specific area of the site, or the entire site. Once EPA develops potential cleanup alternatives, the Agency screens certain options to reduce the number of alternatives for analysis. EPA usually conducts the screening process on a general basis and with limited resources because of the lack of complete information necessary to fully evaluate cleanup options at this point in the process. The FS evaluates the risks in the absence of cleanup actions to provide a baseline for comparison with other alternatives.

Treatability Investigations

EPA conducts treatability investigations primarily to: provide sufficient data to allow for the full development and evaluation of treatment alternatives during the detailed analysis phase; support the design of selected cleanup options; and reduce cost and performance uncertainties for treatment alternatives to acceptable levels so that EPA can select an option.

Detailed Analysis

During this phase, EPA evaluates cleanup alternatives with respect to nine criteria that the Agency developed to address statutory requirements. EPA considers the first two criteria as “threshold” criteria; the next five as “balancing” criteria; and the last two as “modifying” criteria. Specifically:

[1]EPA defines the Hazard Index as the ratio of the exposure level to the referenced, acceptable daily long-term dose from exposure to contaminants at the site.

Nine Criteria for Evaluating Cleanup Alternatives	
Threshold Criteria	1. Overall protection of human health and the environment 2. Compliance with applicable or relevant and appropriate requirements
Balancing Criteria	3. Long-term effectiveness and permanence 4. Reduction of toxicity, mobility, or volume 5. Short-term effectiveness 6. Implementability 7. Cost
Modifying Criteria	8. State acceptance 9. Community acceptance

EPA analyzes cleanup alternatives individually against each criterion and then compares each alternative against one another to determine their respective strengths and weaknesses. EPA also uses its National Remedy Review Board, comprised of Headquarters and regional staff, to review cleanup options to ensure consistency with hazardous waste regulations. The results of this process help the Agency select an appropriate cleanup option.

Record of Decision

EPA creates the Record of Decision from information generated during the RI/FS, and the Record of Decision functions as a public document that explains which cleanup options EPA selected for a site. The Record of Decision includes a table listing the final cleanup goals and the corresponding risk level for each chemical of concern.

Design and Implementation of Cleanup Action

Based on specifications described in the Record of Decision, EPA designs the technical specifications for cleanup options and technologies during this phase, followed by the actual construction or implementation phase of site cleanup.

Designating Priority Sites for Federal Funding and Action

EPA designates priority sites for Federal funding and action upon completion of HRS scoring and after EPA addresses public comments on proposed sites to ensure that EPA allocates scarce resources to the sites posing the most risk to human health and the environment. EPA's National Risk-Based Priority Panel evaluates the risk posed at listed sites to establish funding priorities for new cleanup construction projects. This system allows for an evaluation of projects based on: protection of human health; protection from significant environmental threats; and protection against potential human health or environmental threats based upon current site conditions. The panel meets during the course of the year as needed to prioritize new projects. EPA regional staff complete and submit site forms to the Priority Panel for scoring, and Example C-1 includes a copy of a blank Priority Panel form.

The Priority Panel applies five criteria and associated weighting factors to classify threats that contaminants may pose at a site. The Panel then applies the criteria and associated weighting factors to compare sites based on common criteria. The five criteria are:

Five Criteria for Classifying Threats
1. Risks to human population exposed 2. Contaminant stability 3. Contaminant characteristics 4. Threat to a significant environment 5. Program management considerations

The Panel ranks each criterion on a scale of one to five. The highest score for any criterion is five, representing a current risk-current exposure scenario posing risk to human health and the environment. The lowest score for any factor is one, representing a future risk-future exposure. EPA multiplies the raw score by the weight factor for each criterion as follows, with a maximum possible score of 100:

Criteria	Raw Score Range	x	Weight Factor	= Maximum Total Score *
Risk to human population exposed: population size, proximity to contaminants, and likelihood of exposure.	1 - 5	x	5	**25**
Stability: mobility of contaminants, site structure, and effectiveness of any institutional or physical controls.	1 - 5	x	5	**25**
Contaminant characteristics: concentration, toxicity, and volume.	1 - 5	x	3	**15**
Threat to a significant environment: endangered species or their critical habitats, and sensitive environmental areas.	1 - 5	x	3	**15**
Program management considerations: innovative technologies, cost delays, high profile projects, environmental justice, State involvement, and Brownfields/economic redevelopment.	1 - 5	x	4	**20**
Maximum total project score				**100**

* We multiplied the weight factor by the high end of the raw score range.

Exhibit C-1

Superfund Response Action Priority Form

Regional Site Priority:_____ Region: _____
Site Name:_____
CERCLIS ID:_____ NPL Status: _____

Site Location
City: _____ State: _____
Cong. District: _____

Action
___Remedial, or OU#:_____
___Time Critical Removal (NPL/Non-NPL)
___Non-Time Critical Removal (NPL/Non-NPL)
First, Subsequent, or Final Action for site: _____
If this is a final action, will this result in construction completion for site (Yes/No)?

Site Description
(size, volume of waste, current and future land uses of the site and land adjacent to the site, etc.):

Response Action Summary

1) Describe briefly, site activities conducted in the past or currently underway.

2) Specifically identify the discrete activities to be considered by this panel evaluation along with associated cost and projected schedule.

3) What are the projected additional activities that will result in this site reaching construction completion? What is the estimated cost of these additional activities?

Cost of Proposed Response Action: $_____
(If the response action exceeds $10 million, consultation with the Regional Center Director to discuss alternatives should precede ranking by panel. Deviation from project budget, resulting in the exceedance of the $10 million limit, requires HQ consultation.)

Planned FY 2002 and FY 2003 Needs (If large dollar project, please provide a quarterly forecast): **$_____** (Note: State match = 10%)

Readiness Criteria:

Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

If non-time critical, is State cost sharing (provide details)?

State match = 10%

If Remedial Action when will Remedial Design be 95% complete (Month)?

When will Region be able to obligate money to the site?

Estimate when on-site construction activities will begin ?

I. Principal Contaminants (Please provide average and high concentrations)

	Contaminant	Media	Concentration **(Average)**	**(High)**
1)	_____	_____	_____	_____
2)	_____	_____	_____	_____
3)	_____	_____	_____	_____
4)	_____	_____	_____	_____

Media: (AR) Air, (SL) Soil, (ST) Sediment, (GW) Ground Water, (SW) Surface Water

II. Site/Contaminant Stability (Describe the means/likelihood that contamination could impact other areas/media given current containment):

III. Summarize Human Exposures/Risks (Describe the Exposure Scenario(s) driving the risk and remedy (Include: current/future, on-site/off-site, media, exposure route, receptor):

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

Medium	**< 2yrs.**	**< 10 yrs.**	**> 10 yrs.**
_____	_____	_____	_____

Discuss the likelihood that the above exposures will occur?

Medium	**< 2yrs.**	**< 10 yrs.**	**> 10 yrs.**
_____	_____	_____	_____

Discuss the likelihood that the above exposures will occur?

IV. Explain any Ecological Risks/Impacts

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance and likelihood of occurring, size of the impacted area.

Would natural recovery occur if no action was taken? If so, estimate how long this would take.

V. Programmatic Considerations

Describe the degree to which the community accepts the response action:

Describe the degree to which the State accepts the response action:

Describe other programmatic considerations (e.g., natural resource damage claim pending, Brownfields site, uses an innovative technology, construction completion, economic redevelopment, environmental justice, etc.):

Appendix D

EPA's Cost Estimating Process

Recognizing that unique and changing site circumstances require flexibility in estimating costs for cleanup, EPA estimates costs throughout the Agency's process of prioritizing sites for Federal action, and costs change as projects move forward and more definitive scopes emerge. EPA estimates technical support and supply costs for all phases of cleanups through Independent Government Cost Estimates (IGCEs). EPA estimates costs as one of nine criteria to choose suitable cleanup options. After selecting a cleanup option, EPA performs a detailed construction cost estimate. EPA's guidance documents address cost estimates of cleanup options developed during site investigations, assist project managers with the preparation of assignment-specific IGCEs, and provide cost estimating resources including a web-based "cost-estimating toolbox." Regional project managers do not document historic project costs; rather, they estimate initial costs and ask other prior and current site teams about their cost experiences.

EPA estimates costs throughout the cleanup process. EPA has recently begun to invest more money in the study and design phases of cleanup to develop more accurate cost estimates earlier in the process. Very little cost estimating occurs during the site discovery phase, and the cost estimating that occurs during site discovery assists EPA staff with site characterization. EPA's actual cost estimating process begins during the Remedial Investigation/Feasibility Study (RI/FS) phase after EPA adds a site to its prioritized list for Federal action but prior to actual cleanup. For most cost estimates developed during this phase, EPA relies on anecdotal and empirical data from past sites. According to the National Advisory Council for Environmental Policy and Technology, accurate cleanup estimates are difficult to predict because EPA only has cost information for sites or portions of sites where EPA pays for cleanups using program funds. Potentially responsible parties are not obligated to disclose the amount they spend on cleanup.

According to EPA projections, costs really begin to narrow as EPA better characterizes the site (which reduces uncertainty) and designs its cleanup process. EPA uses cost estimates developed while evaluating and comparing cleanup alternatives to select a suitable option, not for establishing project budgets or negotiating enforcement settlements. EPA begins tracking costs once the Agency selects a cleanup option so as not to prejudice the selection process.

When selecting the most suitable cleanup option for a specific site, EPA uses screening-level cost estimates to screen out disproportionately expensive alternatives in the scoping phase and to help determine what alternatives to retain for detailed analysis. The screening process evaluates cleanup alternatives with respect to their effectiveness, implementability, and cost, and EPA does not carry forward higher cost alternatives. The basis for a screening-level cost estimate can include a variety of sources, such as cost curves, generic unit costs, vendor information, standard cost estimating guides, historical cost data, and estimates for similar projects, as modified for the specific site. EPA considers both capital and operation and maintenance costs, where appropriate, at the screening level. EPA screens out alternatives if they: (1) provide effectiveness similar to that of another alternative by employing a similar method of treatment or engineering control, but at greater cost; or (2) have costs that are grossly excessive compared to their overall effectiveness. After screening alternatives, EPA conducts extensive investigations

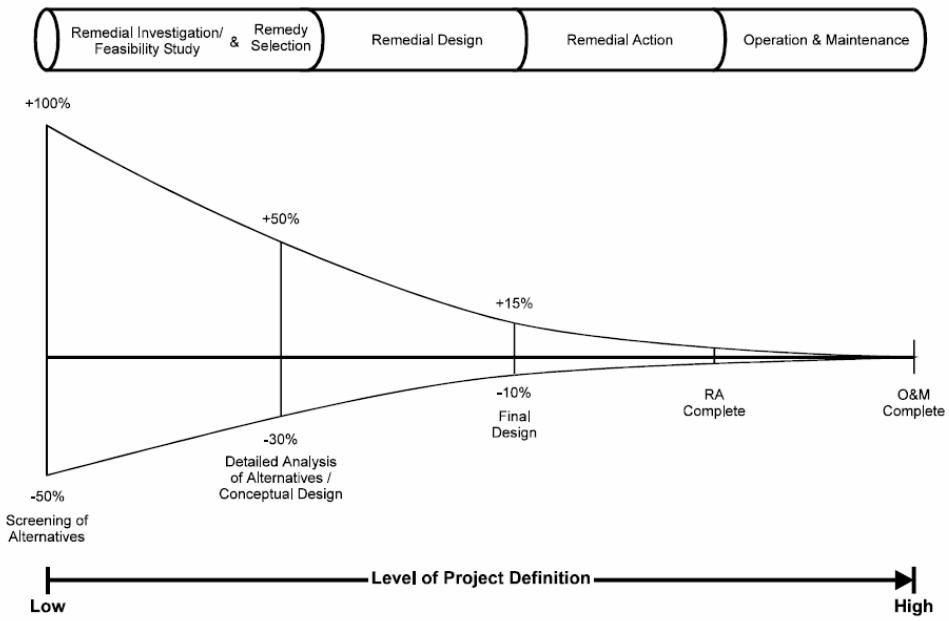
to provide sufficient data to fully develop and evaluate alternatives during the next and final stage of selecting a cleanup option.

The detailed analysis that follows supports the design of selected alternatives, helps reduce cost and performance uncertainties for cleanup alternatives to acceptable levels, and aids EPA's selection of cost-effective cleanup options. EPA evaluates cleanup alternatives in detail with respect to the aforementioned nine criteria[2] that the Agency developed to address the statutory requirements and preferences of the program. Cost functions as one of five "balancing" criteria used to assess cleanup alternatives. EPA analyzes the cleanup alternatives individually against each criterion and then compares each alternative against one another to determine their respective strengths and weaknesses. EPA evaluates cost along with the other "balancing" criteria in determining which cleanup option represents the practicable extent to which EPA can apply permanent treatment solutions or resource recovery technologies at the site. While EPA balances the reasonableness of the cost when evaluating cleanup options, cost does not predominate over other factors, such as long-term effectiveness and permanence. EPA's National Remedy Review Board helps review cleanup options to control response costs and promote consistent and cost-effective decisions.

The accuracy of potential cleanup option cost estimates increase as sites move through EPA's prioritization process, with the detailed analysis phase achieving a greater level of accuracy than screen-level estimates (see illustration that follows, which is Exhibit 2-3 in EPA's "A Guide to Developing and Documenting Cost Estimates During the Feasibility Study). EPA estimates a +50% to -30% accuracy rate for cost estimates performed during the Agency's detailed analysis of cleanup alternatives. Once EPA completes the final cleanup design, the accuracy range of the cost estimate narrows to a +15% to -10% range as costs still change along the tail end of the process.

[2] EPA evaluates cleanup options with respect to: (1) overall protection of human health and the environment; (2) compliance with applicable or relevant and appropriate requirements; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State acceptance; and (9) community acceptance.

Exhibit 2-3
Expected Cost Estimate Accuracy Along the Superfund Pipeline



From: A Guide to Developing and Documenting Cost Estimates During the Feasibility Study (EPA 540-R-00-002) (July 2000).

When estimating cleanup option costs, EPA estimates technical and contractor costs, as well as construction costs necessary to implement the selected option. First, EPA estimates the costs of technical support through an IGCE conducted in-house by EPA staff for each work assignment at a site. Work assignments represent a specific step, or several steps, in EPA's site prioritization process, such as initial assessment and inspection following site discovery, or work assignments to prepare remedial designs for cleanup actions. An IGCE includes a detailed estimate of the cost to the government for services and/or supplies typically acquired from contractors for the specific work assignment. The main components of IGCEs include costs for labor, travel, subcontracts, special equipment, and general and administrative costs. The estimate must represent the government's own in-house estimate based upon information specific to the work at hand, and the estimate can include use of historical cost data from similar projects. The IGCE should represent a "fair and reasonable" cost of doing the work, and the IGCE provides the work assignment manager with information about how much it will cost for a contractor to complete a technical assignment. Since most EPA Regions lack in-house cost estimators, EPA issued a memorandum in June 2004 to assist work assignment managers in preparing IGCEs. EPA also provides regional staff an Internet-based "Cost Estimating Toolbox" that includes guidance documents and worksheets to help project managers prepare site-specific IGCEs and document assumptions made in preparing these estimates.

EPA conducts the second type of cost estimate after the Agency selects a cleanup option that meets statutory and regulatory requirements. EPA employs outside contractors to prepare construction cost estimates, or detailed estimates of the cost to construct the selected cleanup action. Contractors base construction cost estimates on the type and quantities of labor,

equipment, and materials required to perform the work. RS Means Cost Guides construction cost manuals provide useful information. Means data often serves as the standard for construction costs both in the private sector and throughout government, including such agencies as the Federal Housing Administration, the Department of Defense, and the General Services Administration. EPA staff include contractors' construction cost estimates in the IGCE for the cleanup action work assignment, which follows the completion of the design of the chosen cleanup option. EPA's Guidance on Preparing Independent Cost Estimates states that contractors should not use estimates developed during the evaluation of cleanup alternatives (with a typical expected accuracy range of +50% to -30%) for construction cost estimates. Third-party contractors often review construction cost estimates. EPA recommends that project managers obtain third-party review of cost estimates prior to advertising for bids, and that the third-party reviewer consists of a qualified cost estimator employed by the U.S. Army Corps of Engineers. EPA documents each cost estimate for the different cleanup phases in CERCLIS. While CERCLIS documentation of cost estimates provides an appropriate audit trail, some EPA staff believe it unnecessary to document every cost-related nuance.

The Superfund 120-Day Study recommended that EPA prepare and distribute a "cost cookbook" describing frequent construction tasks and estimates of the hours needed to complete the tasks to help regional staff prepare cost estimates. This "cookbook" could include both good and bad examples and experiences from Regions. Additionally, the Government Accountability Office has recommended that EPA maintain data on actual costs of contracted work on a web-based tool accessible by cost estimating staff. The Government Accountability Office also noted the need for Federal agencies to collect detailed site-specific data that includes both current and historical task and cost information, and that Federal agencies utilize co-located agencies with cost estimating expertise for assistance with cost estimating. EPA participates in a Cost Estimating Workgroup presently composed of members from the U.S. Army, U.S. Air Force, U.S. Navy, National Aeronautics and Space Administration, and Department of Energy. All agencies in the Workgroup, with the exception of EPA, have in-house cost estimating expertise.

EPA-OIG issued a 2003 report, "Implementation, Information, and Statutory Obstacles Impede Achievement of Environmental Results from EPA's National Hardrock Mining Framework" (Report No. 2003-P-00010; August 7, 2003) stating that EPA does not have current, accurate data on the extent of financial and environmental challenges posed by hardrock mining. EPA's response to the report included existing sources of information on the environmental impacts from mining such as: (1) environmental impact data on priority mine sites; (2) updated mining impact data in Land Disposal Restriction Phase IV technical background documents; (3) characterization of mining impacted waters when issuing mine site National Pollutant Discharge Elimination System permits; (4) evaluation of the potential for adverse environmental impacts during review of mine site Environmental Impact Statements; (5) characterization of radiological impacts of mining on Navajo lands; and (6) information on environmental releases from mine sites through the Toxics Release Inventory program. Each source could help determine the environmental liabilities of hardrock mine sites for financial statement purposes. Other documents that can assist in assessing the costs, liabilities, and environmental impacts of mining include EPA's Abandoned Mine Lands website, EPA's Publications on Mining Waste Management in Indian Country, and the Agency's Abandoned Mine Site Characterization and Cleanup Handbook.

Appendix E

Distribution

Environmental Protection Agency

Office of the Administrator
Acting Assistant Administrator for Solid Waste and Emergency Response
Deputy Assistant Administrator for Solid Waste and Emergency Response
Agency Followup Official (the CFO)
Agency Followup Coordinator
General Counsel, Office of General Counsel
Audit Followup Coordinator, Office of Solid Waste and Emergency Response
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Associate Administrator for Public Affairs
Director, Office of Regional Operations
Director, Office of Superfund Remediation Technology Innovation
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Regional Administrators
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Department of the Interior

Inspector General

United States Department of the Interior

OFFICE OF THE ASSISTANT SECRETARY
POLICY, MANAGEMENT AND BUDGET
Washington, DC 20240

TAKE PRIDE IN AMERICA

APR 25 2005

Memorandum

To: Inspector General

From: Assistant Secretary – Policy, Management and Budget

Subject: Response to Office of the Inspector General Draft Audit Report, "Department of the Interior, Hazardous Waste Site Management," C-IN-MOA-0040-2004

We appreciate the opportunity to review the subject draft report. The draft report identifies seven recommendations. Our responses include an explanation and summary information that addresses the recommendations.

I. General Comments

Overall, the OIG report does not give full recognition to the status of the current program. The OIG's report does not:

a) Fully acknowledge the Central Hazardous Materials Fund (CHF) program. Though only accounting for five (5) percent of the hazardous materials sites on DOI lands, the CHF represents the highest priority cleanup sites as determined by a committee of environmental experts from each of the land managing bureaus, the Solicitor's Office, Office of the Budget and Office of Environmental Policy and Compliance. Since its inception in 1995 DOI through the CHF, has expended nearly $100 million and cost shared an additional $150 million with responsible parties while addressing these sites. Sites nominated to the CHF represent the highest risk, the most complex and highest cleanup cost of all Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites on DOI lands. DOI is confident that the highest priority hazardous materials sites are being actively addressed. Moreover, DOI believes this approach appropriately uses resources to reduce the highest risks.

b) Adequately acknowledge DOI's progress towards an inventory of contaminated sites that pose a liability to DOI. During the time of the audit, DOI was in the initial stage of implementing an Environmental Cleanup Liabilities (ECL) database. The ECL program includes three current objectives: improving the financial reporting process, expanding the inventory of hazardous materials sites with potential liability and the type of information captured, and improving the cost estimating process. DOI is working toward achieving all three objectives in a phased approach. The first objective (improving the financial reporting process) was in progress at the time of the OIG's audit.

c) Acknowledge ongoing bureau-specific activities conducted to identify and track hazardous waste sites on bureau lands. Though these activities are in varying stages of development and implementation, the OIG report should acknowledge the efforts underway.

1. The Fish and Wildlife Service has initiated a Refuge Inventory Program for identifying and evaluating all sites on its facilities where hazardous substances have been released into the environment or threatened releases exist.
2. The Bureau of Indian Affairs (BIA) has a Facilities Management Information System and in August 2004 finalized the *Environmental Contingent Liability Guidance Handbook*. This guidance includes processes for:
    i. identifying new hazardous waste sites through due care;
    ii. developing and documenting total cost-to-cleanup estimates;
    iii. prioritizing sites based on Departmental guidance (1993);
    iv. tracking and reporting hazardous waste sites that may pose a liability.
3. The Bureau of Land Management (BLM) has developed the Protection Response System Database, which includes a Site Cleanup Module (hazmat sites) and the Abandoned Mine Module, and the Automated Fluid Minerals Support System for Orphaned and Abandoned Oil and Gas Well Sites. These databases are currently being populated in a phased approach.
4. The National Park Service's (NPS) Environmental Management Program developed the NPS ECL database and guidance (*Environmental Cleanup Liability Assessment Cycle Memorandum*) that is distributed to every park quarterly. This guidance specifically requires 'as part of normal operating procedures,' park field staff to routinely monitor parks for potential releases of hazardous substances.

d) Recognize correct terminology. The persistent use of the term "hazardous waste" as a descriptor for DOI's overall program is incorrect. While hazardous waste is involved at some of our sites, it is in general a term used to describe wastes generated by an active industrial enterprise. However, to date the vast majority of the Department's time and resources have been focused on addressing sites on our lands created by other parties. These sites range from illegal dumps to the waste streams associated with authorized uses. This is the critical point underlying DOI's Hazardous Materials Management program. DOI did not create these problems, but we may have an obligation to address them. In many cases, the obligation will require DOI to conduct a cleanup but in other situations our obligation is to pursue the party responsible for contaminating Federal lands to ensure that they conduct the needed cleanups. The correct term that should have been used is "hazardous materials," a more generic descriptor that includes hazardous wastes and hazardous substances (as defined by CERCLA) that encompasses all substances which trigger our response and require our management. Moreover, DOI's environmental liability is based on a broader span of environmental laws than just CERCLA. This broad-based nature is reflected in the Environmental Cleanup Liability (ECL) database.

e) Recognize the Department's response to the 1993 Audit. All sites previously identified in 1993 report have been reviewed. *All either require no further action* or are being addressed by the appropriate bureau or the CHF. Sites currently being addressed are, for the most part,

the result of the bureaus' own continuous efforts at inventorying authorized and unauthorized land uses for cleanup needs. CHF sites are believed to be the most critical and most expensive general class of environmental liability sites. As of July 19, 2004 (69 FR 42989), DOI has 516 sites and facilities on the Federal Agency Hazardous Waste Compliance Docket (Docket). These sites constitute approximately 22.5% of the 2,293 Docket facilities. The Superfund Amendments and Reauthorization Act, enacted by Congress in October of 1986, established the Federal Agency Hazardous Waste Compliance Docket and specific target dates for Federal agency compliance for cleanup of Federal facilities. All Federal facilities and land holdings suspected or known to contain hazardous wastes are to be listed on the Docket, whether or not they rank high enough to be on EPA's National Priorities List (NPL). The procedures for cleaning up non-NPL Federal uncontrolled hazardous waste sites are generally the same as for NPL sites. Of the 516 Docket sites, the Department's pre-remedial site studies indicate that a total of 324 Docket sites (approximately 63%) need no further work and are referred to by EPA as No Further Action Planned (NFRAP). The remaining sites go through the full set of requirements of the National Contingency Plan (NCP). Thirteen of these sites requested CHF funds for FY 2005.

f) Provide an analysis of the costs of using EPA's promising practices for DOI. We requested that some level of implementation cost be estimated since the EPA OIG was a participant in the study. EPA has a history of utilizing these technologies and protocols and should have information on these types of costs.

g) Explain how EPA promising practices provide a meaningful benchmark for DOI. We question the use of a non-land management regulatory agency with a budget for CERCLA response of over $1 billion as a benchmark for a multi-bureau land management agency with a budget for CERCLA response of less than $10 million. Many of the highlighted practices are the product of EPA contractors and are maintained by EPA contractors. While the concept is alluring, the implementation costs will dwarf our tiny budget (1/100th of EPA's budget). DOI, to date, has chosen to focus its limited resources to addressing major problems on the ground. DOI has prepared a review of the EPA OIG report in Appendix III.

II. Recommendations

1. Require OEPC to develop and implement uniform policies and procedures for bureaus to identify and prioritize hazardous sites.

Response

DOI has uniform policies and procedures for addressing CHF sites. DOI is in the process of implementing uniform policies for ECL sites. The identification/inventory of sites is currently addressed by individual bureau policy. This is a direct result of a decision made in 1996 in a response to a draft GAO Audit (GAO/RCED-96-150) that DOI would not, as part of our resource management duties, attempt to get a complete historical record/inventory of land uses. Within this context, OEPC has worked with the bureaus under the auspices of the CHF and now the ECL to identify those sites on our lands. We view the OIG's recommendation as one to modify the existing policy on identification/inventory. As such, OEPC will take this issue to the DOI

Deputy Assistant Secretaries' Advisory Group on Environmental Policy and Compliance (DAS Group) for discussion and for decision.

2. Require OEPC to oversee the Bureaus' actions to ensure compliance with policy and procedures.

Response
The OEPC does provide oversight and compliance review, within existing budget constraints. DOI has issued Department-wide polices that incorporate its commitment to compliance with environmental requirements. They include Departmental Manual Chapter, 518 DM 4, "Environmental Management Systems" dated October 2, 2002; Departmental Manual Chapter, 515 DM 2, "Environmental Auditing" dated September 8, 1997; Departmental Manual Chapter, 515 DM 3, "Environmental Management Recycling Programs" dated February 5, 1998; Departmental Manual Chapter, 518 DM 1, "Comprehensive Waste Management" dated March 3, 1994; Departmental Manual Chapter, 518 DM 2, "Compliance with Waste Management Requirements" dated June 30, 1994. Also, Secretary Norton issued a Secretarial Memorandum on "Improving Environmental Compliance and Performance through Environmental Management Systems" on August 26, 2003. This memorandum commits DOI to environmental compliance and Environmental Management System implementation. These policies are currently available through the DOI Main Webpage located at the following Internet address: http://elips.doi.gov.

OEPC has issued formal policies and guidance to the bureaus through its Environmental Memoranda Series. For example, amendments to Federal environmental regulations were issued to the bureaus through numbered Environmental Compliance Memoranda. Also, OEPC has transmitted informal guidance frequently to bureaus via E-mail, voicemail, and regular mail. Policy and procedures are also reflected in training. In our environmental conferences, OEPC provided both formal training for the bureaus in many areas including environmental auditing, environmental management systems, green procurement, site cleanup and RCRA waste management. OEPC sponsored numerous informal training sessions where subject matter experts from EPA or other agencies/ organizations were invited to speak. OEPC developed a 20-minute videotape entitled "Doing It Right" that addressed management of hazardous waste. On numerous occasions, OEPC was asked to participate on panel sessions or to provide training on hazardous materials management issues both to our bureaus and outside the Department.

We acknowledge that more can be done in this area. However, we must weigh the potential benefits and costs of increased resources for oversight of compliance in conjunction with other DOI budget and management priorities. We will present this recommendation to the DAS Group for their consideration.

3. Require OEPC to develop a Management Information System that captures consistent and accurate data for all hazardous waste sites.

Response
DOI is continuing to develop the ECL and it will be expanded into a management information system. This web-based database application allows the DOI to utilize the ECL as part of the overall approach to Environmental Management Systems. The flexibility, defined forms, and

distributed nature of this system will enhance consistency and management oversight of ECL data. Additionally, this application will allow the Department to address, in part, the two areas of concern involving environmental liabilities identified by KPMG in the Department's FY 2003 Performance and Accountability Report (PAR): 1) controls and 2) training.

The ECL has been developed in close consultation with the bureaus. An interactive, multi-level bureau management review of ECL data as part of the controls that allow supervisors to review changes in ECL and that any changes are properly researched supported and recorded. Training to support the web-based application has been done and more is planned.

4. Require the bureaus to reevaluate current cost estimates and liability codes for accuracy and report accurate information to OEPC.

Response
OEPC is working closely with the Office of Financial Management to address these issues and will establish requirements to reevaluate and review costs on a regular basis. Staffs from both offices have been charged with developing guidance and coordination with the bureaus to ensure consistency and compliance. The draft guidance on cost estimates has been sent to the bureaus and the OIG for comment. We expect that the guidance will be finalized by mid-May. The ECL database already addresses the selection of the liability code by documenting the basis for the coding (via the drop down menu) and by requiring SOL to approve the information.

5. Provide the necessary resources to OEPC to implement an effective hazardous site management program.

Response
An assessment of resources needed will be undertaken and we would appreciate the OIG participation in developing these estimates. The potential benefits associated with the implementation of a Department level hazardous materials management program are obscured by the absence of a realistic look at both benefits and costs. We will present this issue to the DAS Group for their review.

6. Evaluate current resource levels against cleanup needs. Request additional resources if necessary to address critical sites promptly.

Response
This evaluation is done on an annual basis with regards to CHF sites. In addition, working with the DOI Office of Budget, OEPC has drafted guidance for the FY 2007 budget formulation process to address ECL cost estimation and documentation. The implementation of the ECL database will provide a more complete assessment of cleanup/environmental management needs which, in turn will be worked into the budget process. However, as stated above we believe that we are currently addressing the most critical CERCLA sites.

7. Consider EPA's promising practices when developing new procedures and tools for identifying, tracking, and prioritizing hazardous waste sites.

Response

DOI has looked at various solutions, data systems and response tracking systems developed by DOD and EPA. In most cases, their solutions, while appealing at first glance, require resources and contractor support far in excess of anything available to DOI. An additional assessment of resources required to implement the recommended practices will be necessary. We will continue to consider cost-effective procedures developed by other Federal agencies. DOI participates on the EPA-sponsored Federal Remediation Technologies Roundtable, the Environmental Council of the States workgroup on long term monitoring and the DOD-DOE-DOI Remedial Action Cost Estimation Requirements (RACER) workgroup. OEPC will transmit the EPA OIG report when it is finalized (we were requested by the EPA OIG not to distribute the report widely at this time) to the bureaus and get their feedback.

APPENDIX I
COMMENTS BY SECTION

Executive Summary

1) Page I, Paragraph 3
Three of the four bureaus audited did not have a proactive site identification process.

Comment
The IG's report does not acknowledge ongoing bureau-specific activities conducted to identify and track hazardous waste sites on bureau lands. Though these activities are in varying stages of development and implementation, the IG report should acknowledge the efforts underway.

1. The Fish and Wildlife Service has initiated a Refuge Inventory Program for identifying and evaluating all sites on its facilities where hazardous substances have been released into the environment or threaten uncontrolled releases exist.
2. The Bureau of Indian Affairs (BIA) has a Facilities Management Information System and in August 2004 finalized the *Environmental Contingent Liability Guidance Handbook*. This guidance includes processes for:
    i. identifying new hazardous waste sites through due care;
    ii. developing and documenting total cost-to-cleanup estimates;
    iii. prioritizing sites based on Departmental guidance (1993);
    iv. tracking and reporting hazardous waste sites that may pose a liability.
3. The Bureau of Land Management (BLM) has developed the Protection Response System Database, which includes a Site Cleanup Module (hazmat sites) and the Abandoned Mine Module, and the Automated Fluid Minerals Support System for Orphaned and Abandoned Oil and Gas Well Sites. These databases are currently being populated in a phased approach.
4. The National Park Service's (NPS) Environmental Management Program developed the NPS ECL database and guidance (*Environmental Cleanup Liability Assessment Cycle Memorandum*) that is distributed to every park quarterly. This guidance specifically requires 'as part of normal operating procedures,' park field staff to routinely monitor parks for potential releases of hazardous substances.

Results of Audit

2) Page 1, Paragraph 2
DOI allows numerous activities on its land that generate or use hazardous substances...

Comment
DOI is required by statute to allow many of these uses. Through the use of plans of operation, special use permits and other management and planning tools, the responsible bureau generally succeeds in mitigating the effects of these activities on the land.

3) Page 3, Paragraph 4
EPA-OIG identified promising practices in the areas of site discovery, site assessment, prioritization and cost estimating.

Comment
It must be noted that the absence in the report of implementation and maintenance costs for these practices poses a serious omission given the constraints of DOI cleanup program.

4) Page 5, Paragraph 3
DOI has not taken an active leadership or oversight role in the management of hazardous waste sites.

Comment
Though DOI allows each bureau to manage its own environmental programs, DOI does provide central leadership and oversight and has developed guidance and implemented several processes to provide oversight.

Guidance documents include:

- *Department of the Interior Hazardous Materials Site Prioritization System* - Memorandum from Director, Office of Environmental Affairs, January 5, 1993;
- *Environmental Cleanup Liabilities and Materials Used in Facility Construction,* Director, Office of Financial Management and Director, Office of Environmental Policy and Compliance, October 1, 2003;
- ECL Recording and Reporting Final Draft Handbook, April 2004.

Processes implemented include:

- Establishment of the CHF program for funding bureaus highest priority sites (only requirement is that the sites receiving funding are not oil-only releases (i.e., no other hazardous substances associated with the release) and the sites have been assessed through the preliminary assessment site investigation phase (which is necessary for appropriately establishing a site as a high priority). CHF sites have been determined by the Technical Review Committee (TRC) as each bureaus highest priority sites requiring response action.
- Establishment of the TRC consisting of environmental personnel from each land managing bureau, Office of the Solicitor, Office of the Budget and OEPC responsible for presenting the highest priority sites to committee for discussion, assessment and funding.
- Development of an ECL database for tracking and reporting hazardous waste sites for which DOI may be liable (currently in initial stages of production).

5) Page 6, Paragraph 2
The bureaus' current fragmented policies and procedures prevent effective DOI-wide management and do not ensure that the most critical sites are being addressed first.

Comment
DOI is confident that the most critical hazardous waste sites, those associated with known releases of hazardous substances that pose a threat to human health and/or the environment, are being addressed through the ten years of nominations to the CHF program or through the bureau's own review and funding processes. Each bureau is represented on the TRC by an environmental expert. These experts propose those sites that represent their bureau's highest priority (the greatest threat) to the committee for funding.

6) Page 6, paragraph 3
The Department does not have a comprehensive inventory of its known and suspected hazardous waste sites.

Comment
Though the Department recognizes that the ECL database currently does not capture all potential hazardous waste sites, the database is in initial production phase and the IG should acknowledge this. It is the Department's intent to expand the ECL database to track contaminated sites of concern on DOI lands that may pose a liability. DOI is actively working on the ECL database and associated guidance.

7) Page 7, Paragraph 1, Bullet 1
The FWS had a common practice of not recording contaminated sites in the inventory unless the estimated cleanup costs exceeded $250,000 per site.

Comment
The $250,000 threshold implemented by FWS relates to their Operations and Maintenance (O&M) funding process. DOI is reviewing FWS's O&M funding approach for response actions as part of ongoing ECL database and guidance activities.

8) Page 7, Paragraph 1, Bullet 2
DOI officials were aware the ECL represented an incomplete inventory of hazardous waste sites but took little or no action to ensure that all known sites were recorded.

Comment
DOI is actively working towards improving and expanding the ECL database, which will include guidance. At the time of the IG audit, DOI was actively working (and continues to work) on improving the ECL financial reporting process. It is incorrect for the IG to interpret this activity as inaction toward improving and expanding the ECL database. The ECL program includes three current objectives: improving the financial reporting process, expanding the inventory of hazardous materials sites with potential liability and the type of information captured, and improving the cost estimating process.

9) Page 8, Paragraph 1
DOI's current inventory of hazardous waste sites – the ECL – lacks the information needed to make management decisions.

Comment
See response to # 8 above. DOI is currently working with bureau personnel to identify additional site information that will be included in the ECL database.

10) Page 8, Paragraph 4
As a result, DOI's database is incomplete, inconsistent, and not suitable for making sound management decisions or providing accurate financial data.

Comment
Recognizing that the data used in the ECL database needed to be validated before using it and that the database itself needed to undergo testing to ensure correct functioning, a decision was made to utilize the existing spreadsheet ECL reporting system that the ECL database will replace. These spreadsheets were modified in FY 2003 to enhance the capability of transfer of the data to the ECL database. The modified spreadsheets will be used in FY 2005 while the ECL database undergoes final verification testing and data validation. All bureau data will be reviewed by BOR prior to inclusion in the ECL database.

DOI's analysis of the ECL data supplied in spreadsheets identified the deficiencies noted by the OIG. The design of the ECL database allows DOI to address these deficiencies through a series of database screens designed to collect the data needed for validation. Additionally, the ECL database has been designed to closely control the data input and formalize the bureau's data review process. Bureau input cannot be incorporated into the ECL database until it has been certified by designated headquarters financial and environmental staff and the relevant attorney.

11) Page 9, Paragraph 2
DOI does not have a proactive process to identify hazardous waste sites and evaluate the risk posed to human health, wildlife and the environment. Our audit also found that three of the four bureaus did not have a proactive site identification program.

Comment
DOI allows each bureau to manage its own environmental programs while requiring all bureaus to report to DOI those sites that may pose a liability through the ECL program (database development in progress). Each bureau has its own inventory program, including guidance for identifying hazardous waste sites. While all of the bureaus' inventory programs can be improved and made more proactive, their current efforts should be acknowledged. Each bureau has a unique set of missions and their efforts at inventory are diverse, but none of the programs is solely reactive.

- FWS implements the Refuge Inventory Program;
- BIA utilizes the Facilities Management Information System and Environmental Contingent Liabilities Guidance Handbook;
- BLM utilizes the Protection Response System Database, which includes a Site Cleanup Module (hazmat sites) and the Abandoned Mine Module, and the Automated Fluid Minerals Support System for Orphaned and Abandoned Oil and Gas Well Sites;
- NPS uses the NPS ECL database and distributes applicable guidance quarterly.

12) Page 10, Inset
After further review of the (BIA's) information in the system, we (IG) narrowed the number of facilities to be reviewed (for asbestos contamination) to 10 (from 1,378).

Comment
The Department issued guidance regarding materials used in facility construction in October 2003, *Environmental Cleanup Liabilities and Materials Used in Facility Construction*, from Director, Office of Financial Management and Director, Office of Environmental Policy and

Compliance, October 1, 2003. This guidance directs bureaus not to include asbestos as an ECL until such time that it becomes friable and is released to the environment. However, this guidance was in conflict with direction provided to BIA by KPMG auditors. Simultaneous with the IG's audit, the Department was in communication with BIA and KPMG to resolve this issue. BIA's *Environmental Contingent Liabilities Guidance Handbook*, August 2004, correctly states that only friable asbestos that has been released to the environment would be an ECL. This clarification on the part of BIA has resulted in the reduction of asbestos contamination sites reported.

13) Page 11, Paragraph 4, Bullet 1
Develop a risk-based method to prioritize hazardous waste sites and apply an approach that rank sites based on current and future land uses, ecological risks, and tribal/cultural considerations.

Comment
Prioritization guidance issued through memorandum by DOI in 1993 (*Department of the Interior Hazardous Materials Site Prioritization System* - Memorandum from Director, Office of Environmental Affairs, January 5, 1993) and utilized by the CHF program was developed from EPA site prioritization guidance. This DOI prioritization guidance has been incorporated into BIA's August 2004 *Environmental Contingent Liability Guidance Handbook*. Currently, DOI is working with bureau personnel to develop an automated prioritization module in the ECL database.

14) Page 12, Paragraph 1
Cost estimates and financial liability codes for hazardous waste sites were not always adequately supported.

Comment
These deficiencies were identified by BOR working for OEPC during the creation of the ECL database. We had begun addressing these issues prior to the IG's audit and will continue our corrective action as the ECL database is implemented. OEPC and the Office of Financial Management have developed a Corrective Action Plan to address many of the issues developed in the IG report. In this plan, DOI will coordinate closely with the bureaus in the development and issuance of guidance on cost estimation, liability determination and the associated documentation.

15) Page 12, Paragraph 3, Cost Estimates
Bureau support for the cost estimates on the ECL was inconsistent.

Comment
DOI is actively working toward producing cost estimating and documentation guidance. BIA's August 2004 *Environmental Contingent Liabilities Guidance Handbook* includes cost-estimating documentation work sheets. DOI is working with bureau personnel to incorporate a cost-estimating module in the ECL database similar to the documentation work sheets in BIA's guidance.

16) Page 13, Paragraph 4
DOI needs to take steps to validate the liability codes on its inventory.

Comment
The current ECL database requires the basis for a Probable liability categorization and signatory approval by the Solicitor's Office. DOI is also working with bureau personnel to incorporate a liability code module in the ECL database similar to the documentation work sheets in BIA's guidance.

APPENDIX II
BUREAU RESPONSES

Fish and Wildlife Service
The Fish and Wildlife Service reviewed the subject report and concurs with all of the recommendations on page 15 of the report.

It would be helpful if the report specifies exactly what the Office of Inspector General (OIG) wants the Department to do with respect to the list of hazardous waste sites:

- Should the Department develop a list of all contaminated and potentially contaminated sites (those sites for which the Preliminary Assessment /Site Investigation has not been completed to confirm a release) along with all sites which could potentially become contaminated in the future (some of the oil and gas well and mining sites)?
- Should the Department develop a list of all those contaminated and potentially contaminated sites for which DOI is responsible?
- There is considerable emphasis on an inventory of oil and gas wells and mining sites; however, many of those sites are not currently contaminated, even though there is the possibility that they could become contaminated at some point in the future. How does the OIG envision the list of mineral sites being incorporated into the list of contaminated sites?
- Once a master list of sites on DOI lands is developed, should the priority ranking be based on the source of funding? (Central Hazmat Fund only allows CERCLA projects, and CERCLA does not cover oil spills and numerous other cleanups.)
- Should there be any attempt to correlate the DOI priority with DoD's priority at Formerly Used Defense Site (FUDS) sites?

Beyond the development of a "list" of hazardous waste sites, the Service recommends development of:

- An inventory process for use Departmentwide;
- A prioritization system;
- A system for tracking cleanup progress; and,
- Budget processes for requesting funds for inventory, site characterization, prioritization, cleanup, and long-term operations and maintenance.

13) Page 22, Appendix 3, Locations Visited /Contacted:
Under Fish and Wildlife Service, the Solicitor's Office (SOL) is listed.

Comment
Since SOL is not a part of the Service, "Solicitor's Office" should be deleted form the Service list and included in an appropriate list in the Appendix.

Specific Comments

1) Page 2, Flowchart: The Superfund Process

Comment
As illustrated in the Superfund Process flow chart, EPA applies the Hazardous Ranking System (HRS) after the completion of a PA/SI. A common approach is also applied by the DOI. After a PA/SI has been completed, sites that fall under CERCLA regulation and are determined to pose a threat or potential threat to human health or the environment are evaluated by the Central Hazardous Material Fund (CHF) Technical Review Committee (TRC) consisting of environmental experts from each of the land managing bureaus, the Solicitor's Office, Office of the Budget and Office of Environmental Policy and Compliance for assessment, prioritizing and funding. Prioritization guidance issued through memorandum by the Department in 1993 (*Department of the Interior Hazardous Materials Site Prioritization System* - Memorandum from Director, Office of Environmental Affairs, January 5, 1993) and utilized by the CHF program was developed from EPA site prioritization guidance.

2) Page 3, Paragraph 1
States usually discover and report new sites.

Comment
DOI also relies on States, Tribes, and communities to obtain information to identify potential hazardous substance release sites. However, the IG considers this practice "a reactive approach to site discovery" (draft Audit Report, Page 9, Paragraph 3). DOI considers this a practical approach for site discovery, particularly considering the vast expanse of lands managed by the DOI.

3) Page 3, Paragraph 1
Citizens interested in referring a site may submit a formal petition available on EPA's website.

Comment
Please provide the specific web address for this petition form for review and discussion among DOI personnel.

4) Page 3, Paragraph 2
Pre-CERCLIS screening varies among Regions...

Comment
DOI acknowledges that screening approaches among Regions or bureaus will vary, with general procedural guidance from the Department.

5) Page 3, Paragraph 2
CERCLIS generates a one-page decision form that regional reviewers sign, date, and file.

Comment
Please provide DOI with a copy of this decision form or a description of how to access this form through CERCLIS.

6) Page 5
Discussion of the RI/FS process.

Comment
DOI implements the RI/FS or EE/CA process for those sites that fall under CERCLA regulation identified with a potential to pose a risk to human health and the environment based on the results of a PA/SI.

7) Page 6, Cost Estimating, Paragraph 1
Very little cost estimating occurs during the site discovery phase; rather, EPA's cost estimating process begins during the RI/FS phase, after EPA adds a site to its prioritization list for action, but prior to actual cleanup.

Comment
The Statement of Federal Financial Accounting Standard (SFFAS) Number 5, *Accounting for Liabilities of the Federal Government,* encourages the development of total cleanup cost estimates for all environmental liabilities even if the study phase has not been initiated.

DOI also encourages total cleanup cost estimates to be developed for ECL sites that have been classified as probable or reasonably possible liabilities even if the study phase has not been initiated. Therefore, cost estimates are encouraged even for low priority sites. DOI is actively working toward producing cost estimating and documentation guidance. BIA's August 2004 *Environmental Contingent Liabilities Guidance Handbook* includes cost estimating documentation work sheets. DOI is working with bureau personnel to incorporate a cost estimating module in the ECL database similar to the documentation work sheets in BIA's guidance.

8) Page 6, Cost Estimating, Paragraph 1
EPA relies on anecdotal and empirical data from past sites. Regional project managers do not document historic project costs; rather, they estimate initial costs and ask other site teams about their cost experiences.

Comment
DOI acknowledges this practice for cost estimating and considers it appropriate, particularly for ECL sites that have not undergone the study phase. For example, at mine sites, field personnel are very knowledgeable on cleanup cost requirements based on years of like-site cleanups. DOI considers this cost estimating approach appropriate with minimal additional documentation for ECL reporting purposes.

APPENDIX III
EPA'S PROMISING PRACTICES

9) Page 7, Bullet 1
EPA also provides regional staff and Internet-based "Cost Estimating Toolbox" ...

Comment
Please provide DOI access to this Internet-based "Cost Estimating Toolbox" for review and discussion.

10) Page 7, Bullet 2:
EPA uses outside contractors to prepare detailed estimates of the cost to construct the selected cleanup action.

Comment
DOI uses outside contractors for remedial action cost estimate development, as well as Bureau of Reclamation (BOR) cost estimators. BOR has developed cost estimates for CHF-funded environmental cleanups using Remedial Action Cost Engineering and Requirements (RACER). BOR has compiled costs for studies, remediation, long-term maintenance and monitoring at most CHF sites.

United States Department of the Interior

OFFICE OF THE ASSISTANT SECRETARY
POLICY, MANAGEMENT AND BUDGET
Washington, DC 20240

TAKE PRIDE IN AMERICA

MAY 0 4 2005

Memorandum

To: Inspector General

From: Assistant Secretary – Policy, Management and Budget

Subject: Clarification of the Response to Office of the Inspector General Draft Audit Report, "Department of the Interior, Hazardous Waste Site Management," C-IN-MOA-0040-2004

Pursuant to your conversations with the Director, Office of Environmental Policy and Compliance (OEPC), we submit the following clarifying information regarding our April 25, 2005, response.

RECOMMENDATIONS

1. Require OEPC to develop and implement uniform policies and procedures for bureaus to identify and prioritize hazardous sites.

Concur in part.
It is true that the Environmental Cleanup Liability (ECL) database should be based on uniform policies and procedures to characterize sites that are probable, reasonably possible and remote. We also concur that the identification and discovery processes for contaminated sites are currently addressed by individual bureau policy and procedures. We do not concur that the current bureau identification and discovery processes have caused a major problem for the Department (Please see our April 25, 2005, response for details).

Actions to be Taken

- The Director, OEPC will request that the DOI Deputy Assistant Secretaries' Advisory Group on Environmental Policy and Compliance (DAS Group) convene for discussion and for decision on this recommended action. The DAS Group is comprised of a Deputy Assistant Secretary from each Assistant Secretary's Office, and the Deputy Solicitor. The DAS Group is chaired by the Deputy Assistant Secretary for Policy and International Affairs.

- The DAS Group will meet no later than the end of the 4th Quarter FY 2005, to decide whether a uniform policy for identification and discovery is needed. If so, the DAS Group will direct the Director, OEPC to draft such a policy by the end of the 2nd Quarter FY 2006. The Director, OEPC will inform the OIG of the outcome of the DAS Group

meeting within one week of the date of such meeting and provide the OIG with any guidance developed.

Responsible Official: DAS – Policy and International Affairs

2. Require OEPC to oversee the Bureaus' actions to ensure compliance with policy and procedures.

Concur in Part
We concur that if the DAS Group directs OEPC to provide guidance and oversight of the guidance on the uniform policies and procedures as discussed in Recommendation 1, they will do so. We concur that OEPC is required to oversee Bureaus' actions to ensure compliance with policy and procedures in environmental matters. Within its current budget constraint, we believe that OEPC currently provides as much oversight as possible (please see our April 25, 2005, response for details). We acknowledge that more can be done in this area. However, the potential benefits and costs of increased resources for oversight of compliance must be reviewed in conjunction with other DOI budget and management priorities.

Actions to be Taken

- Budget guidance for FY 2007, will include a review of OEPC to determine whether additional resources are needed. If so, the request for any additional resources will be reviewed by the DAS Group recognizing that any increase must be balanced against other Departmental priorities in the DOI's submission to OMB.

- The analysis of OEPC's resource requirements will be done by the end of the 3rd Quarter FY 2006. This document will be given to the OIG.

Responsible Official: DAS – Policy and International Affairs

3. Require OEPC to develop a Management Information System that captures consistent and accurate data for all hazardous waste sites.

Concur
The OEPC is developing the ECL database to be both a management information system (MIS) and an accounting system. (Please see our April 25, 2005, response for details) The ECL will be designed to capture accurate and consistent site information based on available data. Changes in site information will affect estimates of costs and liability.

Action to be Taken
The Director, OEPC will supply the OIG with: Part 300 Submission by the end of the 3rd Quarter FY 2005; access to ECL database as they are developed; and training opportunities. The OEPC would welcome comments on any aspect of the ECL.

Responsible Official: Director, OEPC

4. Require the bureaus to reevaluate current cost estimates and liability codes for accuracy and report accurate information to OEPC.

Concur
The OEPC is working with the Office of Financial Management and Bureaus to address these issues and will establish requirements to reevaluate; review and document costs on an annual basis (please see our April 25, 2005, response for details). The first set of the reviews will be done by the end of the 4th Quarter FY 2005.

Action to be Taken
The Director, OEPC will provide the OIG with the results of the first review by the end of the 1st Quarter FY 2006. We would welcome any comments.

Responsible Official: Director, OEPC

5. Provide the necessary resources to OEPC to implement an effective hazardous site management program.

Concur in Part
Please see our response to Recommendation #2.

Action to be Taken
Please see our response to Recommendation #2.

Responsible Official: Please see our response to Recommendation #2

6. Evaluate current resource levels against cleanup needs. Request additional resources if necessary to address critical sites promptly.

Concur
The FY 2007 budget guidance to OEPC contains this request (please see our April 25, 2005, response for detail).

Action to be Taken
The Director, OEPC will provide the results of this evaluation to the OIG by the end of the 3rd Quarter FY 2005.

Responsible Official: Director, OEPC

7. Consider EPA's promising practices when developing new procedures and tools for identifying, tracking, and prioritizing hazardous waste sites.

Concur
The DOI will review the results of the EPA's OIG report (please see our April 25, 2005, response).

Actions to be Taken

- The Director, OEPC will provide the EPA's OIG report to the DAS Group no later than thirty days after it becomes final.

- The DAS Group will review the contents of the report and provide any recommendations to the OEPC within three months of receipt of the final EPA OIG report.

- The Director, OEPC will provide the results of the DAS Group review to the OIG. If it is determined that some promising practices might be relevant, the Director, OEPC will provide the DAS Group and the OIG with an action plan for implementation including budget requirements within three months of the completion of the DAS Group review.

Responsible Official: DAS – Policy and International Affairs

Appendix 7

STATUS OF AUDIT RECOMMENDATIONS

Recommendations	Status	Action Required
1	Management concurs; additional information needed.	Provide the DOI Deputy Assistant Secretaries' Advisory Group on Environmental Policy and Compliance (DAS group) decision that OEPC implement the recommendation to develop and implement uniform policies and procedures for bureaus to **both** identify and prioritize hazardous sites and an estimated target date and titles of officials responsible for implementation.
2	Management concurs; additional information needed.	Provide the DAS group decision that OEPC oversee the bureaus' actions to ensure compliance with policy and procedures and an estimated target date and titles of officials responsible for implementation.
3, 4, 5, 6, 7	Resolved; not implemented	No further response to the Office of Inspector General is required. The recommendations will be referred to the Department's Focus Leader for Management Accountability and Audit Follow-up for tracking of implementation.

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