



U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review

Report No. 08-P-0235

August 20, 2008

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Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EPA	U.S. Environmental Protection Agency
GAO	Government Accountability Office
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OIG	Office of Inspector General
OSWER	Office of Solid Waste and Emergency Response
PADEP	Pennsylvania Department of Environmental Protection
ROD	Record of Decision
ug/l	micrograms per liter
YCSWRA	York County Solid Waste and Refuse Agency



At a Glance

Catalyst for Improving the Environment

Why We Did This Review

We conducted this review to determine whether deletions from the Superfund National Priorities List (NPL) have (1) consistently followed U.S. Environmental Protection Agency (EPA) guidance and met the National Contingency Plan (NCP) criteria, and (2) been supported by complete and high quality data and analysis which provide reasonable assurance that public health and the environment are protected.

Background

Generally, EPA may delete a site from the NPL either when all appropriate responses under the Comprehensive Environmental Response, Compensation, and Liability Act have been implemented or a response under the Act is not appropriate.

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/2008/20080820-08-P-0235.pdf

EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review

What We Found

As of September 2007, EPA had deleted 322 sites from the NPL. Among the eight sites we reviewed, documentation for the Agency's decision to delete three sites was not consistent with EPA guidance. The Agency's decisions for two of these sites were also not consistent with criteria specified by EPA guidance and not supported by data and analysis. EPA did not ensure cleanup activities and goals were complete and remedies were fully protecting human health and the environment before deleting these two sites.

Response actions are ongoing at one of the three sites where the decisions did not meet the criteria specified by EPA guidance. However, EPA needs more data on the response before it will be able to determine whether this site remains able to protect human health and the environment. For the second site, EPA has not ensured that appropriate response actions were taken to address all regulated substances at the site and that monitoring requirements were met. EPA also has not ensured that the cleanup requirements were met after the third site was deleted.

EPA has conducted limited national oversight of deletion decisions made by EPA's regional offices. National review of deletions is limited because regions do not always submit required information. When reviews of decisions and documents did occur, EPA did not verify that sites met criteria specified in Agency guidance. Other reasons for the deletion problems include misinterpretation or noncompliance with deletion requirements.

What We Recommend

We recommended that EPA implement a national quality assurance process that ensures deletion decisions meet criteria specified by EPA guidance and the NCP and are supported. We also recommended actions to ensure better support for deletion decisions and oversight of ongoing cleanup activities at the deleted sites we reviewed. EPA agreed with our recommendations. The recommendations will remain open until they are fully implemented.



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

OFFICE OF
INSPECTOR GENERAL

August 20, 2008

MEMORANDUM

SUBJECT: EPA Decisions to Delete Superfund Sites Should Undergo
Quality Assurance Review
Report No. 08-P-0235

FROM: Wade T. Najjum 
Assistant Inspector General
Office of Program Evaluation

TO: Susan Parker Bodine
Assistant Administrator
Office of Solid Waste and Emergency Response

Donald S. Welsh
Region 3 Administrator

Lynn Buhl
Region 5 Administrator

This is our report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. The OIG responded to the Agency's draft report comments by making changes to the report and providing responses to EPA, as appropriate. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determination on matters in this report will be made by EPA managers in accordance with established resolution procedures.

The estimated cost of this report – calculated by multiplying the project's staff days by the applicable daily billing rates in effect at the time – is \$809,869.

Action Required

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 90 calendar days. Your response should include a corrective action plan for agreed

upon actions, including milestone dates. We have no objections to the further release of this report to the public. This report will be available at <http://www.epa.gov.oig>.

If you or your staff have any questions regarding this report, please contact Carolyn Copper, Director for Program Evaluation, Hazardous Waste Issues, at (202) 566-0829 or copper.carolyn@epa.gov; or Mike Owen, Project Manager, at (206) 553-2542 or owen.michael@epa.gov

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Chapter 1

Introduction

Purpose

This report focuses on the U.S. Environmental Protection Agency's (EPA's) deletion activities for Superfund sites listed on the National Priorities List (NPL). We sought to determine whether decisions for deleting sites from the NPL have been consistent with EPA guidance and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). We addressed two questions:

- What is the universe of full and partial site deletions?
- Have site deletions from the NPL (1) consistently followed EPA guidance and met the NCP criteria, and (2) been supported by complete and high quality data and analysis which provide reasonable assurance that public health and the environment are protected?

Background

Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended by the Superfund Amendments and Reauthorization Act of 1986, requires EPA to maintain an NPL of uncontrolled hazardous waste sites that have released or pose a threat of release of hazardous substances into the environment. The NCP defines the NPL as the list of priority releases for long-term remedial evaluation and response. As of September 2007, 1,571 sites had been placed on the NPL, and 322 of these sites had been deleted. Portions¹ of another 46 sites had also been deleted from the NPL as of September 2007.

EPA may delete a site from the NPL when criteria specified in the NCP and Agency Superfund guidance are met. In making the decision to delete a site, the NCP specifies that the Agency shall consider, in consultation with the State, whether any of the following three criteria have been met:

1. responsible or other parties have implemented all appropriate response actions required;

¹ EPA may delete portions of NPL sites provided that they meet criteria specified by the Agency's deletion guidance. A portion may be a defined geographic unit of the site or may be a specific medium at a site, such as groundwater.

2. all appropriate EPA-funded responses under CERCLA have been implemented, and no further response action by responsible parties is appropriate; or
3. the remedial investigation has shown that the release poses no significant threat to public health or the environment and, therefore, taking remedial measures is not appropriate.

EPA Administrative Policy delegates to the Regional Administrators the authority to delete sites. EPA's Office of Solid Waste and Emergency Response (OSWER) provides national guidance on the Agency's deletion decisions. EPA's deletion guidance (*Close Out Procedures for National Priorities List Sites*) establishes steps and documentation for meeting the NCP criteria. The guidance specifies that a site is eligible for full or partial deletion from the NPL when the following criteria are met:

1. no further response is required at the site or a portion of the site;
2. all cleanup goals have been achieved; and
3. the site or portion of the site is determined to protect human health and the environment.

The major steps and documentation standards that generally apply for a NPL site deletion are outlined in Table 1.1 below.

Table 1.1. EPA's Deletion Process

Step	Description
1. Complete the final close-out report for site.	The final close-out report describes how the cleanup was accomplished and provides the overall technical justification for site completion. Site completion means that the response actions at the site were successful and no further Superfund response is required to protect human health and the environment.
2. Prepare draft notice of intent to delete.	The Region prepares the draft notice of intent to delete and obtains and addresses comments from EPA Headquarters and the State.
2. Obtain State concurrence for deletion.	The Region consults with the State and requests concurrence on EPA's intent to delete the site. EPA cannot delete a site without the State's concurrence.
3. Compile the deletion docket.	The Region prepares a deletion docket containing all pertinent information supporting the deletion recommendation such as the cleanup decision document and final close-out report. EPA should place the complete docket in appropriate regional and local repositories.
4. Publish notice of intent to delete and provide 30-day public comment period.	The Region publishes the notice of intent to delete in the <i>Federal Register</i> and a major local newspaper of general circulation. The notice should include a description of (1) the history of the site; (2) response actions addressing the contamination; (3) specific cleanup goals, criteria, and results; and (4) how the site meets deletion criteria.
5. Prepare and place final responsiveness summary in the deletion docket and public repositories.	The Region prepares a responsiveness summary for all local and national comments received. The summary provides detailed responses to all comments and is approved by the Regional Administrator.
6. Publish notice of deletion	The Regional Administrator signs the deletion notice and EPA publishes it in <i>the Federal Register</i> .

Source: OSWER Directive 9320.2-09A-P, January 2000, *Close Out Procedures for National Priority Sites*

Deleting a site from the NPL does not mean that EPA cannot conduct additional cleanup actions at the site in the future to protect human health and the environment. It also does not mean that EPA cannot require a responsible party to conduct additional site cleanup actions after deletion. Deleting a site, when appropriate, is a management control that helps EPA ensure it is properly managing the hundreds of priorities on the NPL.

Noteworthy Achievements

EPA has several ongoing and planned efforts that should improve the consistency of its deletion decisions. For example, since November 2006, each region has designated a deletions coordinator that is responsible for serving as an expert on the deletion process. Additional details on the Agency's efforts are discussed in Chapter 2.

Prior Evaluations

The Government Accountability Office (GAO) issued the report *Improved Effectiveness of Controls at Sites Could Better Protect the Public* (GAO-05-163, January 2005), that identified problems with institutional controls² at a number of sites deleted from the NPL. Among the issues discussed in the report was that EPA often did not ensure that institutional controls were in place before it deleted sites from the NPL.

Scope and Methodology

We conducted our evaluation from July 2006 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our evaluation. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our evaluation objectives.

To evaluate the Agency's process for deleting sites from the NPL, we interviewed officials from OSWER and Regions 3 and 5. We selected a judgment sample of eight of 309 sites deleted from the NPL as of June 2006. We selected sites located in Regions 3 and 5 where information presented in public notices, 5-year review reports, and/or other relevant documents appeared inconsistent with deletion criteria specified by EPA guidance and the NCP. For example, we considered a site condition to be inconsistent with the criteria where the information indicated that human health exposures or contaminated groundwater migration was not under control. We also considered a site condition to be inconsistent with the criteria where cleanup goals were not met or information indicated long-term protection to human health was not achieved. Table 1.2 below shows the eight sites in our sample.

² EPA defines institutional controls as administrative and legal controls that help to minimize the potential for human exposures to contamination and protect the integrity of the cleanup remedy. Institutional controls work by limiting land or resource use and by providing information that helps modify or guide human behavior at properties where hazardous substances prevent unlimited use and unrestricted exposure.

Table 1.2. Sample of Sites Deleted from the NPL

Site	Region
McAdoo Associates	3
Lehigh Electric and Engineering Company	3
York County Solid Waste and Refuse Authority Landfill (YCSWRA)	3
Enterprise Avenue	3
Kummer Sanitary Landfill	5
Southside Sanitary Landfill	5
Republic Steel Corporation Quarry	5
Omega Hill North Landfill	5

Source: EPA OIG

We reviewed key documents and data used to support the deletion decisions. These documents included EPA cleanup decision documents [i.e., Records of Decision (RODs)] site sampling data, 5-year review reports, final close-out reports, deletion dockets, and public notices. Appendix A provides further details on our scope and methodology, including our review of internal controls.

Chapter 2

Superfund Site Deletions Have Not Always Been Consistent with EPA Criteria

Our review of eight sites deleted from the NPL showed that the documentation did not meet criteria specified by EPA guidance for three of the sites. The Agency's deletion decisions for two of these sites were also not consistent with criteria specified in EPA guidance and not supported by data and analysis. Specifically, we found one or more of the following issues for each of the three sites:

- The requirements for a final close-out report, deletion docket, and/or public notice of the pending deletion action had not been met.
- Cleanup and other requirements (as prescribed in RODs) were not met.

These issues occurred primarily because the Agency delegated the authority to delete sites from the NPL to the regions without providing consistent national oversight for deletion decisions. These deletion issues also occurred because the regions misinterpreted or did not follow EPA's guidance. Because of these issues, the Agency did not fully inform the public about the cleanup status and/or was unable to ensure long-term protection for these sites at the time of deletion.

Some Deletions Were Inconsistent with Criteria and Not Supported

EPA's documentation for deletions of three of the eight sites we reviewed did not meet criteria specified in Agency guidance. In addition, for two of these three sites, the deletion decisions were not consistent with criteria specified by EPA guidance and not supported by data and analysis. Table 2.1 identifies the general categories of criteria not met. These issues are discussed in more detail below.

Table 2.1 Types of Criteria Not Met Prior to Site Deletion

Site	Region	Year Deleted from NPL	Documentation Standards Not Met	Cleanup Requirements Not Met
YCSWRA	3	2005	X	X
McAdoo Associates	3	2001	X	X
Kummer Sanitary Landfill	5	1996	X	

Source: EPA OIG

Deletion Decisions Did Not Meet Documentation Standards

As shown in Table 2.1, Regions 3 and 5 did not meet the documentation standards specified by EPA's deletion guidance for three of the sites we reviewed. EPA's guidance establishes specific standards for supporting the Agency's decision to delete a site from the NPL. These standards include completion of a final close-out report, deletion docket, and notice of intent to delete. We found the following documentation issues for three of the eight sites reviewed:

- A final close-out report was either not prepared or was not complete for two sites. According to the guidance, the final close-out report should contain details showing that all response actions at the site have been successfully completed. The guidance specifies that the report should include sufficient details to show cleanup levels have been met and all necessary institutional controls have been implemented. A final close-out report was not prepared for the YCSWRA site. Although a final close-out report was prepared for the McAdoo Associates site, it was not complete. This report was incomplete because it did not include groundwater data showing that cleanup goals were met.
- A deletion docket was not prepared or prepared late for the YCSWRA and Kummer Sanitary Landfill sites, respectively. EPA's guidance specifies that the deletion docket should be compiled and made available to the public before the Agency publishes the notice of intent to delete. The guidance also specifies that the docket contain the applicable documents supporting the deletion decision. These supporting documents generally include site investigation studies, ROD(s), State concurrence letter on deletion, and the final close-out report for the site. At the time of our review, Region 3 had not prepared the docket for the YCSWRA site. We found that the docket for the Kummer Sanitary Landfill site was prepared more than 3 months after the site was deleted. Further, this docket did not include any of the information specified by the deletion guidance.
- The notices of intent to delete for the three sites were not complete because they either did not include a description of the cleanup goals and relevant sampling results or clearly disclose the cleanup status of the site. EPA's guidance specifies that the notice include this information. The notice for the YCSWRA and McAdoo Associates sites did not discuss the cleanup goals and the relevant sampling results. Although the notice for the Kummer Sanitary Landfill site included a description of the response actions, it did not clearly disclose that the groundwater cleanup would be implemented later by the State of Minnesota under its Landfill Cleanup Law. Instead, the notice identified that "all work that could be expected under a State order or under State closure requirements has been completed" and no further response action under CERCLA is appropriate to protect human health and the environment. We also found that the State

had not fully implemented the groundwater response specified by the ROD for Kummer Sanitary Landfill site after the site was deleted. This issue is discussed further in Chapter 3.

Cleanup Requirements Were Not Met Before Sites Were Deleted

The YCSWRA and McAdoo Associates sites were also deleted from the NPL before meeting cleanup requirements. The deletion decisions for these sites were also not supported by data and analysis. EPA's guidance specifies that a site is eligible for full or partial deletion from the NPL when:

- no further response is required at the site or a portion of the site,
- all cleanup goals have been met, and
- the site or portion of the site protects human health and the environment.

The cleanup issues for each site are discussed below and more details on the issues are provided in Appendix B.

YCSWRA Site

Region 3 deleted this site before groundwater cleanup requirements specified by the ROD were met. The Region's deletion notices for the site reported that all appropriate CERCLA responses had been completed and no further response actions, other than operation and maintenance of the remedy, were necessary. However, this information was not supported because the groundwater cleanup was not completed at the time the site was deleted. Rather, the Region removed the groundwater response actions from the ROD during 2004. The Region removed these actions to transfer the cleanup to the State of Pennsylvania and delete the site from the NPL. According to the deletion notices, the groundwater response actions were removed for three primary reasons. First, a 1984 agreement between the State and responsible party also required the response actions. Second, EPA expects, based on past performance, the responsible party will continue the responses under the State's oversight. Third, the responsible party is required under a CERCLA consent order to report to EPA all actions taken to comply with the agreement with the State.

Despite the Region's justification for deleting the site, we found that the ROD continues to require restoration of the groundwater at the site to its beneficial use by treating the contaminated groundwater to the more stringent of background or maximum contaminant levels (MCLs). The ROD also continues to require a monitoring program to assess the effectiveness of the groundwater treatment system and its impact on surface water, sediments, and wetland habitat. These requirements are necessary to protect human health and the environment and should be met to delete the site. The most recent groundwater sampling at the site before deletion occurred in 2004. This sampling data showed that three contaminants of concern had not met MCLs. In addition, the Region had not

determined whether background contamination levels were more stringent than MCLs as required by the ROD.

The Region's deletion decision was also not supported by analysis. According to the Region 3 attorney involved in the deletion decision, the cleanup goals for the ground water response actions in the ROD were no longer relevant after the Region modified the document in 2004. We found that the cleanup goals in the 1984 agreement between the State and the responsible party are less stringent than the goals removed from the ROD. The cleanup goals removed from the ROD required that the levels for 15 contaminants of concern be reduced to the more stringent of background or MCLs for a period of 12 consecutive quarters. However, the cleanup goals under the 1984 agreement require the cleanup of only four of these contaminants of concern. Further, the cleanup goals in the 1984 agreement require that the levels for these four contaminants be reduced to MCLs for a period of 1 year. EPA's ROD guidance specifies that the Agency include in the modification a detailed analysis showing that the ROD continues to meet CERCLA requirements when primary response actions and cleanup goals are removed. The Region's 2004 ROD modification did not include this detailed analysis. As a result, we were not able to verify that the response action under the 1984 agreement will provide the level of protection to human health and the environment that was required by the ROD before it was modified in 2004.

The cleanup goals in the 1984 agreement are also inconsistent with the remaining cleanup requirements in the ROD. The ROD continues to require restoring the contaminated groundwater to the more stringent of background or MCLs. Since the site was deleted from the NPL, response actions at the site have continued under the 1984 agreement. However, the most recent groundwater sampling results available during our review (2006) showed that the remedy for the site had not yet met the cleanup requirements specified by the ROD. Two contaminants of concern were at levels approximately 14 times the MCL. Additionally, Region 3 completed a 5-year review³ of the site during 2007, but was unable to make a protectiveness determination. The Region was unable to make this determination because:

- monitoring to assess the groundwater treatment system's impact on surface water, sediments, and wetland habitat has not been done as required by the ROD; and
- vapor intrusion to the homes near the site from the groundwater contamination is a potential issue requiring further investigation.

The Region's 5-year review report includes recommendations and milestones for resolving these issues by 2009. According to the report, the Region will make a protectiveness determination and issue an addendum to the 2007 5-year review report by December 2009.

³ CERCLA requires the evaluation of the implementation and performance of Superfund remedies every five years where remedial actions leave hazardous substances, pollutants, or contaminants on site.

McAdoo Associates Site

The deletion notices for the McAdoo Associates site reported that Region 3 had implemented all appropriate responses under CERCLA. However, sampling data showed that groundwater cleanup goals specified by the ROD had not been met for four contaminants of concern at a portion of the site (Operable Unit 2). Site records also showed that the Region had not established a cleanup goal for a fifth contaminant of concern as required by the ROD.

The Region's conclusions in the final close-out report and notices of intent to delete for Operable Unit 2 were unsupported. The Region concluded in these documents that it could delete the operable unit because most of the site contaminants exceeding cleanup goals were residuals of gasoline and fuel oil and were not contaminants of concern under CERCLA. The documents stated that the Region based this conclusion on a thorough evaluation of sampling data. The Region also concluded in the documents that another contaminant was present at concentrations slightly above the cleanup goal. However, we could not confirm these findings because the Region did not document the analyses supporting its conclusions, and the ROD continues to require groundwater monitoring and attaining the cleanup goals.

The most recent groundwater sampling results (2006) for Operable Unit 2 showed that groundwater cleanup goals for three contaminants of concern listed in the ROD had not yet been met. Although the operable unit was deleted before cleanup goals had been met, we found that the Region and the State have not yet agreed on appropriate response actions to address and monitor the remaining contamination. However, the unit appears to protect human health in the short-term because nearby residents receive potable water from municipal water sources. We discuss these response issues further in Chapter 3.

Primary Causes for Inconsistent and Unsupported Site Deletions

These issues occurred primarily because the Agency delegated the authority to delete sites to the regions without providing consistent national oversight for deletion decisions. These issues also occurred because EPA's deletion guidance was misinterpreted or not followed by Regions 3 and 5.

EPA's deletion guidance specifies that OSWER is required to review the regions' notices of intent to delete to ensure national consistency and completeness. Although the guidance establishes a national review process, OSWER's quality assurance activities have not provided reasonable assurance that sites meet Agency criteria before regions delete sites from the NPL. According to OSWER managers, OSWER reviews all notices of intent to delete that the regions submit to it and provides comments as appropriate. However, it indicated that the regions do not always submit the notices to OSWER for review. OSWER staff also indicated that their reviews of the notices did not verify that sites met the

deletion criteria specified in EPA's guidance. For example, these reviews did not verify that all cleanup goals and other requirements specified in the ROD have been met and included in the deletion notices. We were unable to evaluate the scope and depth of the Agency's reviews of the deletion notices because these reviews were generally not documented. The deletion issues we identified show that the Agency's review activities have not ensured that deletion decisions meet the criteria specified in EPA's deletion guidance.

Another contributing cause for inconsistent and unsupported deletion decisions was that criteria specified by EPA's guidance either was misinterpreted or not followed by the regions. Our discussions with Region 3 and 5 managers and staff disclosed that documentation problems with final close-out reports, deletion dockets, and notices of intent to delete occurred because they either misinterpreted or did not follow EPA's deletion guidance. A third contributing cause was that Region 3 managers and staff indicated that changes in remedial project managers contributed to missing and incomplete deletion records for the YCSWRA and McAdoo Associates sites. A Region 5 manager said that the Region did not include more specific details on the cleanup at the Kummer Sanitary Landfill site primarily because the notice of intent to delete identified that the State of Minnesota had assumed responsibility for the site.

With regard to the deletion decision for the YCSWRA site, the Region 3 Administrator said in a written response to our preliminary evaluation results that the site was deleted because the Region determined that all appropriate response actions under CERCLA had been completed and no further response actions were necessary under the Act. The Regional Administrator explained that the Region modified the ROD to eliminate the groundwater cleanup as a Federal requirement. The Regional Administrator also said that the cleanup goals were no longer relevant when the groundwater response was removed from the ROD. However, the Region stated in the modification that the scope, performance, cost, and objectives of the ROD were not fundamentally altered. The stated primary objective of the ROD is to restore contaminated ground water to its beneficial use by treating the contaminated ground water to background levels or to MCLs, whichever is more stringent. Therefore, the overall cleanup objective and requirements were not eliminated by the modification. In addition, the monitoring requirements for evaluating the effectiveness of the groundwater cleanup were not eliminated from the ROD and were not met before the site was deleted.

Region 3 also did not follow criteria specified by EPA's guidance with regard to the deletion decision for the McAdoo Associates site. Region 3 managers told us that the Region's decision to delete the McAdoo Associates site was appropriate. However, they acknowledged that the Region should have revised relevant cleanup documents to address changes in the remedy for Operable Unit 2 and demonstrate support for the deletion decision and satisfaction of the Agency's deletion requirements. According to Region 3 managers, the Region had not

revised some documents because they thought that the remedy change was fully disclosed in the final close-out report and notice of intent to delete. The managers also told us that the Region would make appropriate revisions to better support the deletion decision as part of its efforts to address issues identified during its 2005 5-year review of the unit. In addition, Region 3 managers told us that the Region planned to establish an internal deletions coordinator to ensure that future site deletions are consistent with EPA requirements.

Recent Agency Actions to Improve Deletion Decisions

OSWER has taken several steps since January 2000 when it issued the most recent update to EPA's deletion guidance. These actions, once fully implemented, should assist the Agency with establishing management controls that ensure deletion activities are consistent with the criteria specified in EPA guidance. OSWER's actions include:

- Since approximately November 2005, all EPA notices of intent to delete and notices of deletion are now published in the Federal Docket Management System. These deletion notices are available electronically to the public through www.regulations.gov. In addition, the regions are now responsible for ensuring that all supporting materials for deletion dockets are online or referenced.
- OSWER requested in November 2006 that each region designate a deletions coordinator. The deletions coordinators have several responsibilities. One is to ensure that deletion docket materials are available electronically before notices of intent to delete are published. The coordinators are also responsible for serving as a deletions expert for the region. In addition, they serve as a liaison between the region, OSWER and other regions for national discussions involving deletions issues. The coordinators are also required to attend Federal Docket Management System rule writer training and assist with populating the deletions dockets in the system. This effort is intended to ensure that portions of the deletion dockets are available online and at the regional and local repositories during the public comment period.
- Since January 2000, OSWER has presented training on EPA's deletion guidance in all 10 regions and at two national conferences. OSWER will offer the training nationwide again during 2007 and 2008. OSWER reported that it has already provided this training to Regions 1 and 7.
- In early 2007, OSWER staff with review responsibilities for draft deletion documents received refresher training on document reviews. The purpose of the training was to promote national consistency when reviewing draft deletions documents.

- In September 2007, EPA's Office of Regulatory Policy and Management and OSWER agreed that deletion notices from a region will only be published after receiving clearance from OSWER. The Assistant Administrator for OSWER informed us in June 2008 that OSWER has also proposed a change in the NPL site deletion delegation. According to the Assistant Administrator, this change will require OSWER's formal concurrence on the notice of intent to delete before the document is signed by the Regional Administrator. OSWER plans to conduct quality assurance reviews of the notices and deletion dockets to ensure they meet EPA's deletion criteria before providing clearance for publication. An OSWER manager stated that the delegation change should be implemented in the Summer of 2008.
- OSWER developed deletion document templates to incorporate Federal Docket Management System language, increase consistency in the various documents, and more clearly identify the site-specific technical content required for deletion documents. OSWER finalized and made these templates available to the regions in May 2008.
- OSWER's Assessment and Remediation Division was reorganized in June 2008. A key component of the reorganization is that post construction completion activities, including NPL deletion, will be consolidated into one branch. According to OSWER managers, this action will improve quality assurance activities. Training on reviewing deletion documents for staff in the new branch was conducted in October 2007.

Conclusions

At three deleted Superfund sites we reviewed, EPA has not consistently applied and implemented the deletion criteria outlined in Agency guidance. These site deletions occurred during 1996, 2001, and 2005. The issues found at these sites show weaknesses in EPA oversight and controls to detect when Agency staff and managers have inappropriately followed the site deletion process. Weaknesses in oversight have meant the Agency deleted some sites that did not meet the required level of human health and environmental protection.

Since deletion, two of the three sites where we identified problems still do not meet EPA's criteria for deletion. They require ongoing monitoring or response actions to ensure long-term protection of human health and the environment.

Recommendations

We recommend that the Assistant Administrator for OSWER:

- 2-1 Implement a quality assurance process that ensures NPL deletion decisions meet EPA guidance and NCP criteria before sites are deleted. At a minimum, the process should include the following actions by OSWER:
 - a. Verification review to ensure draft final close-out reports and public notices include all information specified in EPA's deletion guidance, including cleanup goals and all confirmatory sampling results.
 - b. Verification that all appropriate site response actions have been implemented, including institutional controls, and cleanup goals have been met.
 - c. Verification that final close-out reports and deletion dockets have been completed and placed in the appropriate regional and local repositories.

We recommend that the Administrator for Region 3:

- 2-2 Issue amendments to EPA's ROD and the final close-out report that document the change in the remedy and provide appropriate support for the deletion decision for the McAdoo Associates site.
- 2-3 Complete a deletion docket for the YCSWRA site and place copies in appropriate regional and local repositories. Also, complete a final close-out report for the site after all response actions are successfully completed and cleanup goals are met as specified by EPA's ROD.
- 2-4 Conduct an analysis to determine whether the current groundwater response action at the YCSWRA site provides the same level of protection to human health and the environment as the response specified in EPA's ROD prior to its modification in 2004. If the current response is less protective, reinstate appropriate response requirements in EPA's ROD for the site.
- 2-5 Correct the inconsistency between the cleanup goals for the current groundwater response for the YCSWRA site and the cleanup requirements specified in EPA's ROD.
- 2-6 Resolve the groundwater monitoring and vapor intrusion issues discussed in EPA's 2007 5-year review report for the site by no later than December 2009. Take appropriate corrective actions to address any unacceptable human health and/or ecological risks identified from the groundwater monitoring and vapor intrusion investigation.

- 2-7 Increase EPA's monitoring activities for the YCSWRA site to ensure that the remedy is progressing towards meeting the cleanup requirements specified by EPA's ROD and remains protective of human health and the environment. At a minimum, annually review groundwater monitoring data and conduct site visits to verify cleanup progress, compliance with cleanup requirements, and site conditions.

We recommend that the Administrator for Region 5:

- 2-8 Complete a deletion docket for the Kummer Sanitary Landfill site and place copies in appropriate regional and local repositories.

Agency Comments and OIG Evaluation

The OIG received comments on the draft report from OSWER, Region 3, and Region 5, and we made changes to the report where appropriate. The Agency agreed with all recommendations and Agency Offices described corrective actions, for their respective recommendations, that have been taken, are in process, or are planned. Appendix C provides the full text of the Agency's comments and the OIG's responses.

OSWER agreed with Recommendation 2-1 and described corrective actions taken, in process, or planned. For example, OSWER stated that it has proposed a change in the NPL site delegation to require formal concurrence by OSWER on the notice of intent to delete before notices are signed by the Regional Administrator. OSWER said that this concurrence process will ensure that it reviews deletion notices and that they are consistent with criteria specified by the NCP and EPA guidance. OSWER also said that it is in the preliminary stages of updating the January 2000 *Close Out Procedures for National Priorities List Sites*. According to OSWER, the changes will include clarifying deletion requirements, updating deletion docket requirements, updating the deletion document review process, and providing updated deletion document templates. OSWER will need to provide additional information for some corrective actions in its response to the final report as discussed in Appendix C. This recommendation remains open until OSWER implements the corrective actions.

Region 3 agreed with Recommendations 2-2 through 2-7 and provided corrective actions that are in process and planned. The corrective actions for 2-2, 2-3, 2-5, 2-6, and 2-7 meet the intent of our recommendations. For example, in response to Recommendation 2-2, Region 3 said it is preparing an Explanation of Significant Differences that will document necessary changes to the remedy and clarify the information supporting the deletion decision for the McAdoo Associates site. The Region also said it will prepare an attachment to the final close-out report that will provide supporting documentation and clarify the deletion.

Region 3's corrective actions for Recommendation 2-4 do not fully address the recommendation. In its response to the final report, the Region will need to describe actions taken or planned to ensure that the groundwater response for the YCSWRA site provides the same level of protection to human health and the environment as the response specified in EPA's ROD prior to its modification. The Region will also need to provide milestones for implementing or completing the corrective actions, as appropriate, for Recommendations 2-2 and 2-4 through 2-7. Recommendations 2-2 through 2-7 will remain open until Region 3 implements the corrective actions.

Region 5 agreed with Recommendation 2-8 and said that a deletion docket for the Kummer Sanitary Landfill site has been completed and placed in the appropriate repositories. This recommendation is open until Region 5 provides completion dates for these corrective actions in its response to the final report.

Chapter 3

EPA Has Not Ensured Appropriate Response Actions Have Been Implemented at Some Deleted Sites

EPA has not ensured that appropriate response actions were taken to address contamination after two sites we reviewed were deleted from the NPL. Region 3 has not ensured that all hazards at Operable Unit 2 of the McAdoo Associates site have been addressed and monitoring requirements were met. Region 5 has not ensured that the State of Minnesota has fully implemented the groundwater remedy specified by the ROD for the Kummer Sanitary Landfill site. Because of these issues, EPA was unable to ensure that the response actions at these two sites provide long-term protection to human health and the environment.

The response problems at the McAdoo Associates site occurred primarily because Region 3 relied on 5-year reviews to assess and monitor conditions at Operable Unit 2. For the Kummer Sanitary Landfill site, we found that Region 5 had not verified whether the State has fully implemented the remedy specified by the ROD.

Additional Actions Required at the McAdoo Associates Site

Region 3 has not ensured that appropriate response actions were taken to address all hazards at Operable Unit 2. The Region also has not ensured that groundwater monitoring requirements specified in the ROD for the operable unit were met. More specifically, since deleting the operable unit, Region 3 has not:

- ensured that appropriate response actions were taken for all remaining regulated hazardous substances;
- met long-term groundwater monitoring requirements;
- conducted regular site inspections;
- reestablished groundwater monitoring that meets ROD requirements, despite the Region's 2005 determination that the location posed a threat to human health and the environment; and
- ensured that institutional controls are in place.

The Region has not ensured that EPA or the State of Pennsylvania took appropriate responses actions for all regulated contaminants. The Region did conclude that remaining high levels of contamination from gasoline and fuel oil in the groundwater were no longer contaminants of concern under CERCLA. However, it has not yet determined whether these pollutants required response actions under another authority such as the Resource Conservation and Recovery

Act. A Region 3 manager told us that the Region had pursued discussions with the State of Pennsylvania about an appropriate State response. However, the Region's site files did not demonstrate that the Region had been working with the State to resolve issues with the remaining contamination at the unit prior to the EPA's 2005 5-year review. In November 2007, the State agreed to investigate the source and extent of the remaining contamination and evaluate the potential for vapor intrusion in residences located near the operable unit. Region 3 staff told us in April 2008 that the State was working on a workplan, but has not completed this investigation.

The Region has not met long-term monitoring requirements specified in the ROD for the unit. The ROD required the Region to continue groundwater monitoring until cleanup goals have been met for 3 years. Despite this requirement, the Region did not sample the groundwater during the first 4-year period after the unit was deleted (July 2001 to June 2005). As a result, the Region was unaware of contamination levels at the unit for several years. In June 2005, the Region sampled the groundwater for the EPA's 5-year review covering the entire site. The results showed that levels in the groundwater at the unit for three contaminants continued to exceed the cleanup goals specified in the ROD. Table 3.1 shows the highest levels for the three contaminants identified from the 2005 groundwater samples.

Table 3.1. June 2005 Groundwater Sampling Results for Operable Unit 2

Contaminant	Cleanup Goal (ug/l*)	Sampling Results (ug/l)	Number Times Results Exceed Cleanup Goal
Benzene	0.2	380	1,900
Ethylbenzene	0.2	760	3,800
Bis (2-ethylhexyl) phthalate	2.5	6	2.4
*micrograms per liter			

Source: EPA OIG analysis of McAdoo Sampling Report, dated September 22, 2005.

The Region does not consider the benzene and ethylbenzene levels listed in Table 3.1 to be contaminants requiring remediation under CERCLA. However, the Region reported in the deletion notices that it would continue to monitor the contamination at the unit. The 2005 sampling results indicate that the contamination continues to exceed levels that protect human health and the environment.

The Region did not conduct regular inspections of the unit and ensure that EPA maintained and secured the groundwater monitoring wells. Although EPA deleted the site in December 2001, the Region did not inspect the unit until the 2005 5-year review. The Region conducted this review from March through June 2005. The Region's report for this 5-year review disclosed:

- Inspectors could not find four of eight monitoring wells that had been sampled in 2001 at the location. Three of these wells also could not be found during the last inspection that occurred in 2001 before the site was deleted. Construction debris and activities either destroyed or covered up the four wells.
- The remaining four wells had been altered and were not secured with locking caps.
- A sewage pumping station had been constructed on or adjacent to the unit without the Region's knowledge. The Region found that this construction resulted in considerable soil disturbance at the unit and may have resulted in the destruction of two of the monitoring wells.

The Region has not reestablished groundwater monitoring that is consistent with ROD requirements despite its 2005 determination that the unit posed a potential long-term threat to human health and the environment. The ROD for the operable unit requires that EPA conduct groundwater sampling semi-annually until cleanup goals are met, and then quarterly until the goals have been maintained for 3 years. The Region stated in an addendum to the 2005 5-year review that monitoring was stopped because sampling conducted since 2000 showed no remaining contaminants requiring remediation under CERCLA and one other contaminant was below the MCL. The Region made this decision even though the State had previously expressed concerns that the cleanup goals for the unit have not been achieved and the contamination continues to pose potential risks to human health and the environment. Although the Region did conduct sampling at the operable unit in 2006 and 2007, the Region has not committed to continuing the groundwater monitoring.

A Region 3 manager told us that the 2007 sampling results reconfirmed the Region's previous conclusions that the remaining pollutants in the groundwater were not contaminants of concern under CERCLA. The manager also said that the Region informed the State that the contamination could not be addressed under CERCLA. However, the State said in a November 2007 letter to the Region that a thorough review of the sample data in conjunction with administrative documents that specify such things as performance standards need to be completed before a decision can be made on future monitoring.

The Region also has not ensured that institutional controls, such as groundwater and site use restrictions, were in place to protect human health and the environment. According to Region 3 managers, the groundwater does not pose a human exposure risk because all residents near the unit obtain potable water from municipal sources. The managers also said that the Region established some controls through a 1994 agreement between EPA and the current owner of the unit. However, this agreement does not fully restrict use of the groundwater at the unit or establish other controls to limit potential human exposure to the contamination.

We found that these issues occurred because of a lack of oversight by Region 3 after the site was deleted from the NPL. The site files demonstrated that the Region relied on the 5-year review process to assess and monitor conditions at the site. With regard to groundwater monitoring, a Region 3 manager told us that confusion among Region 3 staff about the monitoring requirements contributed to the infrequent groundwater sampling at the unit. Recently, the Region disclosed that it would start inspecting the unit annually and that three additional groundwater monitoring wells for the site were located in 2006. Our review of the report for the 2007 groundwater sampling results confirmed that the Region has located seven of the monitoring wells.

EPA's Remedy Not Fully Implemented at Kummer Sanitary Landfill

Region 5 had not ensured that the State of Minnesota had fully implemented the groundwater remedy specified by EPA's ROD after the Kummer Sanitary Landfill site was deleted from the NPL.

EPA deleted the site based on criteria specified in a 1995 agreement between EPA and the State of Minnesota. Under the agreement, the State is responsible for implementing the remedy specified in EPA's ROD addressing groundwater contamination at the site. This agreement specifies that the State would implement the remedy after EPA deleted the site. At the time of deletion, the ROD required that the groundwater contamination at the site be addressed using bioremediation. The ROD also established an active gas extraction system as the contingency remedy if bioremediation was determined to be ineffective at addressing the contamination. The State implemented the bioremediation remedy in 1996 after the site was deleted. In 1997, the State determined that the remedy was not effective. Rather than implementing the contingency remedy, we found that the State is using passive venting to address the groundwater contamination. However, passive venting is not included as an alternative response in the ROD. This alternative response emits volatile pollutants to the air to reduce the contaminant levels and control gas migration from the landfill.

We reviewed the most recent groundwater sampling results available for the site, taken in 2006. The results showed that the State's cleanup remedy had not met cleanup goals for three contaminants of concern listed in the ROD. These results are shown in Table 3.2.

Table 3.2. 2006 Sampling Results for Kummer Sanitary Landfill

Contaminant	Cleanup Goal (ug/l)	2006 Range of Sampling Results (ug/l)
Vinyl chloride	0.2	0.4 – 1.2
Barium	2000	2100 and 3700
Arsenic	10	11 -40

Source: EPA OIG Analysis of Kummer Sampling Report, dated March 27, 2007.

According to the Region's 2003 5-year review for the site, the State has addressed immediate and short-term threats to human health through ongoing response actions and implementation of institutional controls. However, the 5-year review did not accurately describe the State's groundwater response at the site. EPA's 5-year review identified natural attenuation as the remedy for the contamination rather than the passive venting system that the State has implemented. The Region's 5-year review also did not identify that the State had failed to implement the contingency remedy specified by the ROD. Therefore, it appears that the Region may not have obtained complete information on response actions at the site during its 5-year review.

The State's most recent inspection report for the site, issued in 2007, disclosed that the response actions at the site are ongoing. However, the report disclosed that the passive venting system might need additional capacity to better control the landfill gas migration. Because the passive venting system was not included in EPA's ROD, we were unable to determine whether the State's response has been at least as protective to human health and the environment as the active gas extraction remedy specified in the ROD.

We found that this response issue occurred because Region 5 had not required the State to fully implement the remedy specified by the ROD. Region 5 managers said that the Region's activities for the site have consisted of reviews of the State's annual reports on response actions at the site and 5-year reviews. They also said that the Region did not conduct additional activities because EPA's 1995 agreement with the State specified that the Region terminate its oversight after the State assumed full responsibility for the site. However, a Region 5 manager told us that the Region planned to evaluate the protectiveness of the State's groundwater response during the next 5-year review for the site scheduled for 2008. The manager also said that the Region planned to document any changes in the remedy specified in the ROD through an appropriate revision to the decision document after the 2008 5-year review was completed.

Recommendations

We recommend that the Administrator for Region 3:

- 3-1 Work with the State of Pennsylvania to ensure that necessary response actions are taken under the appropriate regulatory authority to address groundwater contamination at Operable Unit 2 of the McAdoo Associates site. The response actions should include appropriate controls limiting human exposure to the groundwater.

- 3-2 Re-evaluate groundwater monitoring requirements at Operable Unit 2 of the McAdoo Associates site under the appropriate regulatory authority. Require that the monitoring program include a sufficient number of monitoring wells to fully characterize the groundwater contamination and a sampling frequency that ensures protection to human health and the environment.
- 3-3 Require that any changes to the current monitoring requirements specified in the ROD for Operable Unit 2 of the McAdoo Associates site be incorporated into appropriate decision documents.
- 3-4 Conduct visits to Operable Unit 2 of the McAdoo Associates site at least annually to verify that site conditions remain protective to human health and the environment.

We recommend that the Administrator for Region 5:

- 3-5 Ensure that EPA's 5-year review scheduled for March 2008 evaluates the protectiveness of the groundwater remedy at the Kummer Sanitary Landfill site. Document any changes to the remedy for groundwater through an appropriate ROD revision after the 2008 5-year review is completed.
- 3-6 Require the State of Minnesota to implement, operate, and maintain the groundwater remedy specified by the ROD for the groundwater at the Kummer Sanitary Landfill site.

Agency Comments and OIG Evaluation

Regions 3 and 5 agreed with the recommendations and described corrective actions that have been taken, are in process, or are planned. The Regions' corrective actions are responsive and fully address Recommendations 3-3 through 3-6. However, their corrective actions do not fully address Recommendations 3-1 and 3-2. Appendix C provides the full text of the Regions' comments and the OIG's responses.

Region 3 agreed with Recommendation 3-1 and said that it is currently working with the State of Pennsylvania to implement the recommendations issued in EPA's 2005 5-year review for the McAdoo Associates site. The Region also said that the State is currently performing an investigation of the remaining petroleum contamination at the site and will assess whether or not vapor intrusion may be an issue. The Region further stated that, although institutional controls do exist for the site, EPA will work with the State and the property owner to determine what additional controls are necessary and ensure they are established as appropriate. The Region's comments partially address the recommendation. However, the comments do not describe how vapor intrusion will be addressed if the State's investigation determines that a response is necessary to protect the health of

residents living near the site. The comments also do not include a milestone or milestones for completing the corrective actions. The Region will need to provide additional details on actions taken and/or planned, along with a milestone, or milestones, for completing the corrective actions in its response to the final report. Recommendation 3-1 will remain open until the Region implements the corrective actions.

Region 3 agreed with Recommendation 3-2 and said that EPA is working with the State of Pennsylvania to evaluate groundwater contamination at Operable Unit 2 of the McAdoo Associates site. The Region stated that EPA believes that there is already a sufficient number of monitoring wells for complete characterization of the Bis (2-ethylhexyl) phthalate contamination at the site. However, the Region said that the State may determine that additional monitoring wells are necessary to define the extent of the petroleum contamination at the operable unit. In its response to the final report, the Region will need to describe how EPA determined that there are sufficient monitoring wells to characterize Bis (2-ethylhexyl) phthalate in the groundwater. The final response will also need to include a milestone, or milestones, for completing the corrective actions. Recommendation 3-2 will remain open until the Region provides more information on the corrective actions and the actions are fully implemented.

Region 3 agreed with Recommendation 3-3. The Region stated that it intends to clarify groundwater monitoring requirements through the second Explanation of Significant Differences discussed in its comments on Recommendation 2-2. This recommendation is open until the Region incorporates changes to the current monitoring requirements into an Explanation of Significant Differences.

Region 3 agreed with Recommendation 3-4. However, the Region will need to provide a schedule for completing the site visits to Operable Unit 2 of the McAdoo Associates site in its response to the final report. The recommendation is open until the Region provides the schedule and the corrective action is implemented.

Region 5 agreed with Recommendation 3-5 and stated that the second 5-year review for the Kummer Sanitary Landfill site was completed in March 2008. The Region said that the 5-year review evaluated the groundwater remedy and found that natural attenuation is successfully reducing the remaining chemicals of concern that still exceed Safe Drinking Water Act Maximum Contaminant Levels and that the remedy is considered to be protective of human health and the environment in the short-term. The Region commented that long-term protectiveness requires implementation, maintenance, and compliance with groundwater use restrictions and other institutional controls until cleanup standards are met. The Region also stated that the 5-year review included as a recommendation and follow-up action the issuance of a decision document within a year identifying monitored natural attenuation as the groundwater remedy for the site. This recommendation is open until Region 5 provides a specific

milestone for issuing the revision to the ROD and completes the corrective action in its response to the final report.

Region 5 agreed with Recommendation 3-6. The Region stated that, as recommended by the March 2008 5-year review, it will be working with the State of Minnesota to modify the latest ROD to reflect the remedy currently being implemented at the site. In its response to the final report, the Region will need to provide a specific milestone for issuing the revision to the ROD. The recommendation is open until the Region issues the revised ROD.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed To Amount
2-1	14	<p>Implement a quality assurance process that ensures NPL deletion decisions meet EPA guidance and NCP criteria before sites are deleted. At a minimum, the process should include the following actions by OSWER:</p> <ul style="list-style-type: none"> a. Verification review to ensure draft final close-out reports and public notices include all information specified in EPA's deletion guidance, including cleanup goals and all confirmatory sampling results. b. Verification that all appropriate site response actions have been implemented, including institutional controls, and cleanup goals have been met. c. Verification that final close-out reports and deletion dockets have been completed and placed in the appropriate regional and local repositories. 	O	Assistant Administrator OSWER			
2-2	14	Issue amendments to EPA's ROD and the final close-out report that document the change in the remedy and provide appropriate support for the deletion decision for the McAdoo Associates site.	O	Region 3 Administrator			
2-3	14	Complete a deletion docket for the YCSWRA site and place copies in appropriate regional and local repositories. Also, complete a final report for the site after all response actions are successfully completed and cleanup goals are met as specified by EPA's ROD.	O	Region 3 Administrator	09/30/08		
2-4	14	Conduct an analysis to determine whether the current groundwater response action at the YCSWRA site provides the same level of protection to human health and the environment as the response specified in EPA's ROD prior to its modification in 2004. If the current response is less protective, reinstate appropriate response requirements in EPA's ROD for the site.	O	Region 3 Administrator			
2-5	14	Correct the inconsistency between the cleanup goals for the current groundwater response for the YCSWRA site and the cleanup requirements specified in EPA's ROD.	O	Region 3 Administrator			
2-6	14	Resolve the groundwater monitoring and vapor intrusion issues discussed in EPA's 2007 5-year review report for the site by no later than December 2009. Take appropriate corrective actions to address any unacceptable human health and/or ecological risks identified from the groundwater monitoring and vapor intrusion investigation.	O	Region 3 Administrator			

RECOMMENDATIONS						POTENTIAL ONETARY BENEFITS (in \$000s)	
Rec. No.	Page No.	Subject	Status ¹	Action Official	Planned Completion Date	Claimed Amount	Agreed To Amount
2-7	15	Increase EPA's monitoring activities for the YCSWRA site to ensure that the remedy is progressing towards meeting the cleanup requirements specified by EPA's ROD and remains protective of human health and the environment.	O	Region 3 Administrator			
2-8	15	Complete a deletion docket for the Kummer Sanitary Landfill site and place copies in appropriate regional and local repositories.	O	Region 5 Administrator			
3-1	21	Work with the State of Pennsylvania to ensure that necessary response actions are taken under the appropriate regulatory authority to address groundwater contamination at Operable Unit 2 of the McAdoo Associates site.	O	Region 3 Administrator			
3-2	22	Re-evaluate groundwater monitoring requirements at Operable Unit 2 of the McAdoo Associates site under the appropriate regulatory authority. Require *that the monitoring program include a sufficient number of monitoring wells to fully characterize the groundwater contamination and a sampling frequency that ensures protection to human health and the environment.	O	Region 3 Administrator			
3-3	22	Require that any changes to the current monitoring requirements specified in the ROD for Operable Unit 2 of the McAdoo Associates site be incorporated into appropriate decision documents.	O	Region 3 Administrator			
3-4	22	Conduct visits to Operable Unit 2 of the McAdoo Associates site at least annually to verify that site conditions remain protective to human health and the environment.	O	Region 3 Administrator			
3-5	22	Ensure that EPA's 5-year review scheduled for 2008 evaluates the protectiveness of the groundwater remedy at the Kummer Sanitary Landfill site. Document any changes to the remedy through an appropriate ROD revision after the 2008 5-year review is completed.	O	Region 5 Administrator			
3-6	22	Require the State of Minnesota to implement, operate, and maintain the groundwater remedy specified by the ROD for the groundwater at the Kummer Sanitary Landfill site.	O	Region 5 Administrator			

¹ O = recommendation is open with agreed-to corrective actions pending
C = recommendation is closed with all agreed-to actions completed
U = recommendation is undecided with resolution efforts in progress

Appendix A***Details on Scope and Methodology***

We conducted our evaluation from July 2006 to March 2008 in accordance with *Government Auditing Standards*, issued by the Comptroller of the United States. Our scope generally covered EPA's activities for deleting sites from the NPL during the period from November 1985 through June 2006. We gained an understanding of EPA's deletion process by interviewing managers and program staff from OSWER and Regions 3 and 5. We also reviewed documents and records applicable to EPA's Superfund process and NPL site deletion activities. We reviewed the NCP and EPA guidance documents applicable to NPL deletions. Our review included the following EPA guidance documents:

- *Interim Procedures for Deleting Sites from the National Priorities List* (OSWER 9320.2-01, March 1984)
- *Procedures for Completion and Deletion of National Priorities List Sites* (OSWER Directive 9320.2-3A, April 1989)
- *Close Out Procedures for National Priorities List Sites* (OSWER 9320.2-09A-P, January 2000)

To assess management controls, we evaluated the Agency's quality assurance procedures and records for deletion decisions from November 1985 through June 2006. We found that the Agency needs to enhance quality assurance activities to ensure its decisions are consistent with criteria specified by EPA guidance and fully supported. Our evaluation work considered the findings on institutional controls noted in the Prior Evaluations section of this report.

We evaluated NPL deletions for Regions 3 and 5. We selected these regions primarily because they were among the regions with the highest number of NPL deletions. We also selected these regions to provide geographical coverage for the eastern and central sections of the nation. We made site visits to these two regions and reviewed documents relevant to their deletion decisions.

We reviewed Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) information to identify the universe of full and partial site deletions. We obtained this information from OSWER. We conducted limited testing to verify the accuracy of this data. We compared site names and deletion information from CERCLIS with Superfund documents and records for a judgment sample of eight deleted sites. The selection criterion for this sample is discussed below. Our testing did not identify any major discrepancies between the CERCLIS information and Superfund documents and records.

We used a judgment sample to determine whether EPA's deletion decisions have been consistent with EPA criteria and fully supported. We selected a judgment sample of 8 of the 309 sites deleted from the NPL as of June 2006. We selected sites located in Regions 3 and 5. We selected sites where information in public notices, 5-year review reports, and/or other relevant documents appeared inconsistent with EPA's deletion criteria. For example, we considered a site condition to be inconsistent with the criteria where the information indicated that human

health exposures or contaminated groundwater migration was not under control. We also considered a site condition to be inconsistent with the criteria where cleanup goals were not met or long-term protection to human health was not achieved. We reviewed documents applicable to deletion decisions. These documents included deletion dockets, RODs, site sampling data, final close-out reports, 5-year review reports, and public notices. We evaluated the deletion decisions and documents supporting the decisions for the sites using applicable Superfund criteria. The criteria included the NCP and OSWER guidance documents relevant to NPL deletions.

Appendix B***Additional Details on Sites that Were Deleted
Before Meeting EPA Criteria***

The Agency's deletion decisions for the York County Solid Waste and Refuse Authority Landfill (YCSWRA) and McAdoo Associates sites were not consistent with criteria specified in EPA guidance and not fully supported. Before deleting these sites, EPA had not ensured that all site cleanup activities were complete, cleanup goals were met, or that the remedies were fully protecting human health and the environment. This appendix provides additional details on the deletion decision issues for these sites discussed in Chapter 2.

YCSWRA Site***Background***

The YCSWRA site is located in Pennsylvania. This site was listed on the NPL in 1987 and deleted in 2005. The site consists of a 135-acre inactive, unlined landfill that was used for municipal and industrial waste disposal. The site was placed on the NPL because hazardous substances from past disposal practices were contaminating the groundwater and nearby residential wells. This groundwater was the primary drinking water supply for local residents. Prior to the site's placement on the NPL, the State of Pennsylvania entered into an agreement with the responsible party to cleanup the contamination at the site. This agreement established specific response requirements at the site, including the cleanup of the groundwater. Since 1984, the responsible party has implemented a program to address the groundwater contamination and the affected residential wells surrounding the site.

Response Actions

Because of the site's placement on the NPL, the State required the responsible party to conduct a formal investigation to determine the appropriate response actions under CERCLA. The responsible party completed this investigation in May of 1994. In December 1994, EPA issued a ROD establishing site-specific cleanup requirements that were necessary to meet CERCLA requirements and provide appropriate protection to human health and the environment. EPA's ROD was based on the responsible party's investigation results. The ROD selected the existing remedy at the site, which was established under the 1984 agreement between the State and the responsible party, and added additional response requirements. The major response actions required by the ROD included the following:

1. Continued operation of the currently existing groundwater extraction and air stripper treatment systems.
2. Continued operation and maintenance of the existing drinking water treatment systems for affected residences using affected private wells.
3. Continued maintenance of the landfill's cap and passive venting system.

4. Continued sampling of treated drinking water and groundwater to ensure that treatment components are effective and groundwater remediation is progressing towards cleanup goals.
5. Implementation of a monitoring program to assess the effectiveness of the groundwater treatment system and its impact on surface water and wetland habitat.
6. Implementation of a monitoring program to assess the impact of the treated groundwater discharge on the nearby surface waters and sediments.
7. Deed restrictions to prohibit the installation of new on-site wells and disturbance of the landfill's cap.

The ROD also established more stringent cleanup goals for the groundwater and required the cleanup of additional contaminants. For example, the primary groundwater cleanup goal under the 1984 agreement required the cleanup of only volatile organic compounds to MCLs for a period of 1 year. EPA's ROD required that the groundwater be cleaned up for organic and inorganic (e.g., barium and mercury) compounds to the more stringent of background or MCLs for a period of 12 consecutive quarters. The ROD also required monitoring for an additional 5 years to ensure that cleanup goals have been maintained.

In 1997, EPA issued a CERCLA consent order to the responsible party that requires implementing the environmental monitoring and deed restriction requirements specified in the ROD. The consent order also requires the responsible party to submit monthly reports on actions taken to comply with the 1984 agreement with the State and groundwater sampling results to Region 3.

Basis for Deletion

In 2004, Region 3 modified the ROD to eliminate response actions 1 through 4 listed above. The Region disclosed in the modification that these actions were eliminated for the following reasons:

- The 1984 agreement between the State and responsible party also requires the response actions.
- EPA expects, based on past performance, the responsible party to continue the response actions under the State's oversight.
- The responsible party is required under the CERCLA consent order to report to EPA all actions taken to comply with the agreement with the State.

Based on this modification, the Region determined that the CERCLA remedy consisted of monitoring and deed restrictions. As a result, the Region "determined that all appropriate response actions under CERCLA have been completed and, therefore, further remedial action pursuant to CERCLA is not appropriate."

OIG Evaluation of Deletion Decision

The Region's deletion decision for this site did not meet the criteria specified in EPA's deletion guidance and was not fully supported. As a result, EPA was unable to fully ensure that response

actions at the site would provide long-term protection to human health and the environment before the site was deleted.

Region 3 stated in the modification to the ROD that the scope, performance, cost, and objectives of the ROD were not fundamentally altered. The stated primary objective and requirement of the ROD is to restore contaminated ground water to its beneficial use by treating the contaminated ground water to background levels or MCLs, whichever is more stringent. Therefore, the Region's modification of the ROD did not remove the groundwater cleanup requirement established under CERCLA. The ROD also continues to require a monitoring program to assess the effectiveness of the groundwater treatment system and its impact on surface water, sediments, and wetland habitat.

We found that the Region deleted the site before the groundwater cleanup requirements specified by the ROD were met. The most recent groundwater sampling at the site before deletion occurred in 2004. This sampling data showed that three contaminants of concern had not met MCLs. These results are shown in Table B.1. In addition, the Region had not determined whether background contamination levels were more stringent than the MCLs as required by the ROD.

Table B.1. 2004 Groundwater Sampling Results for YCSWRA

Contaminant	Maximum Contaminant Level (ug/l)	Range of 2004 Sampling Results (ug/l)
Tetrachloroethene	5	12.6 – 82.9
Vinyl chloride	2	2.2 – 27.6
Manganese	50	90 – 17,200

Source: EPA OIG analysis of YCSWRA Sampling Reports, dated December 15, 2004.

The Region deletion decision was also not supported by analysis. We found that the cleanup goals in the 1984 agreement between the State and the responsible party are less stringent than the goals removed from the ROD by the Region's modification in 2004. The cleanup goals removed from the ROD required that the levels for 15 contaminants of concern be reduced to the more stringent of background or MCLs for a period of 12 consecutive quarters. However, the cleanup goals under the 1984 agreement require the cleanup of only four of these contaminants of concern. Further, the cleanup goals in the 1984 agreement require that the levels for these four contaminants be reduced to MCLs for a period of one year. EPA's ROD guidance specifies that the Agency include in the modification a detailed analysis showing that the ROD continues to meet CERCLA requirements when primary response actions and cleanup goals are removed. The Region's 2004 ROD modification did not include this detailed analysis. As a result, we were not able to verify that the response action under the 1984 agreement will provide the level of protection to human health and the environment that was required by the ROD prior to its modification in 2004.

The cleanup goals in the 1984 agreement are also inconsistent with the remaining cleanup requirements in the ROD. The ROD continues to require the restoration of the contained groundwater to the more stringent of background or MCLs.

Since deletion from the NPL, remediation activities at the site have continued under the 1984 agreement between the State and the responsible party. The most recent groundwater sampling results available during our review (2006) showed that the remedy for the site had not yet met cleanup requirements specified by the ROD. These results are shown in Table B.2. Two contaminants of concern, tetrachloroethene and vinyl chloride, were at levels approximately 14 times the MCL.

Table B.2. 2006 Groundwater Sampling Results for YCSWRA

Contaminant	Maximum Contaminant Level (ug/l)	Range of 2006 Sampling Results (ug/l)
Tetrachloroethene	5	11.9 – 77.5
Vinyl chloride	2	2.4 – 27.4
Manganese	50	50 – 19,300

Source: EPA OIG analysis of YCSWRA Sampling Reports, dated June 26, 2006.

The remedial action is ongoing and Region 3 has reported institutional controls are in place including deed restrictions to prohibit installation of new onsite wells in the area of contamination. However, the Region recently completed a 5-year review of the site during 2007 and was unable to make a protectiveness determination. The Region was unable to make this determination because (1) monitoring to assess the groundwater treatment system's impact on surface water, sediments, and wetland habitat has not been done as required by the ROD; and (2) vapor intrusion to the homes near the site from the groundwater contamination is a potential issue requiring further investigation. The Region's 5-year review report includes recommendations and milestones for resolving these issues by 2009. According to the report, the Region will make a protectiveness determination and issue an addendum to the 2007 5-year review report by December 2009.

McAdoo Associates Site

Background

The McAdoo Associates site is located in Pennsylvania. This site was listed on the NPL in 1983 and deleted in 2001. The site consists of two operable units that are about 3 miles apart. Operable Unit 1 is about 8 acres in size. Operable Unit 2 is a small lot, about ½ acre in size. Operable Unit 1 was used for storing and processing of hazardous waste. Operable Unit 2 was used for temporary storage of waste oil and liquid hazardous waste prior to incineration at Operable Unit 1. Because both locations were operated as one facility involving the same ownership and waste, they were combined and collectively called the McAdoo Associate site. The sites were listed because hazardous substances from the past waste operations had contaminated the soil, groundwater, and surface water.

Our evaluation identified issues with the deletion decision for Operable Unit 2. Therefore, the details presented below pertain only to Operable Unit 2.

Response Actions

Region 3 conducted the following response actions at the Operable Unit 2 under two RODs:

1. In 1984, the Region issued a ROD requiring the removal of five underground storage tanks and contaminated soils. The Region completed these actions in 1985.
2. The Region issued another ROD in 1991 that determined, among other things, that no further response action was necessary at the unit. However, the ROD required the Region to perform groundwater monitoring. During 1992 and 1993, the Region installed monitoring wells and sampled the groundwater.
3. Based on the 1993 groundwater monitoring results, the Region issued a ROD amendment in 1993. The amendment required the Region to install wells and a treatment system to extract and cleanup contaminated groundwater. These contaminants included weathered fuel oil and gasoline. The amendment also established cleanup goals for each contaminant of concern and required remediation of the groundwater until these goals were met.
4. After installation and testing of the groundwater extraction wells in 1995, the Region determined that the capacity of the aquifer would not support continuous extraction and treatment of the contaminated groundwater.
5. In 1995, the Region issued a modification to the ROD. The modification terminated the construction of the groundwater treatment system and established new response actions at the unit. Among other actions, the modification required manual extraction of the contaminated groundwater on a periodic basis with off-site treatment.

Basis for Deletion

Region 3 deleted the site because it determined that the site met the following two criteria specified by the NCP:

- the responsible parties or other parties have implemented all appropriate response actions required; and
- all appropriate fund-financed responses under CERCLA have been implemented and no further action by responsible parties is appropriate.

Region 3 disclosed in the final close-out report and notice of intent to delete for the site that it made this determination based on its thorough analysis of the groundwater data from four sampling events. These sampling events were conducted between 1996 and 2000. The Region said in these documents that this sampling data showed that most of the remaining pollutants in the groundwater were not contaminants of concern under CERCLA because they were constituents of fuel oil and gasoline. These documents also disclosed that that the remaining groundwater contamination did not threaten nearby residents because they obtain potable water from municipal sources.

OIG Evaluation of Deletion Decision

The Region's deletion decision for Operable Unit 2 did not meet the criteria specified EPA's deletion guidance and was not fully supported. As a result, EPA was unable to fully ensure that response actions at the site would provide long-term protection to human health and the environment before the site was deleted.

We found that the Region deleted the unit without meeting the cleanup requirements specified by the ROD. Although, the Region determined that most of the remaining pollutants in the groundwater were no longer contaminants of concern, the ROD continued to include response actions for these and other pollutants in the groundwater at the time the unit was deleted. The most recent groundwater sampling at the unit before deletion occurred during 2000 and 2001. This sampling data showed that groundwater cleanup goals had not been met for four contaminants of concern. These results are shown in Table B.3. In addition, site records showed that the Region had not established a cleanup goal for manganese even though the ROD required that the Region establish a cleanup level for the contaminant. As shown in Table B.3, the manganese was measured at levels 288 times greater than EPA's MCL.

Table B.3. 2000 - 2001 Groundwater Sampling Results for McAdoo Associates

Contaminant	Cleanup Goal (ug/l)	Range of 2000/2001 Sampling Results (ug/l)
Benzene	0.2	39 – 576
Ethylbenzene	0.2	7 – 893
1,2 dichloroethane	0.03	1 and 3
Bis (2-ethylhexyl) phthalate	2.5	1 – 10
Manganese	(a)	611 – 14,400
(a) EPA has promulgated a maximum contaminant level of 50 ug/l for the contaminant.		

Source: EPA OIG analysis of McAdoo Associates Sampling Reports, dated January 18, 2000 and November 16, 2001.

We could not confirm the Region's conclusions on the remaining groundwater contamination because the Region did not document the analysis of the sampling results. The Region concluded that the most of the remaining contaminants in the groundwater were benzene and ethylbenzene, which were not contaminants of concern under CERCLA. Our review of the sampling data showed that these pollutants, along with at least one other contaminant listed in Table B.3, were found together at levels exceeding cleanup goals in three monitoring wells. Under CERCLA, EPA considers benzene and ethylbenzene as contaminants of concern when they are intermixed with at least one of the other hazardous pollutants listed in Table B.3. Region 3 also reported in the final close-out report and notice of intent to delete that the bis (2-ethylhexyl) phthalate levels in the groundwater were slightly above the cleanup goal. However, as shown in Table B.3, the contaminant was found at a level as high as 4 times the cleanup goal.

Although we could not confirm the Region 3's conclusions supporting its deletion of the unit, the site appears to be protective to human health over the short-term because nearby residents receive potable water from municipal water sources.

Appendix C

Agency Comments on Draft Report and OIG Evaluation

June 6, 2008

MEMORANDUM

SUBJECT: OSWER Response to OIG Draft Evaluation Report, *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*

FROM: Susan Parker Bodine/s/
Assistant Administrator

TO: Bill A. Roderick
Deputy Inspector General

Thank you for the opportunity to review and comment on the draft OIG evaluation report, *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*. We are responding to recommendation 2-1. Regions 3 and 5 will be responding to the remaining recommendations under a separate cover.

COMMENTS

We offer the following comments on the draft evaluation report:

<u>Page</u>	<u>Comment</u>
None	The Table of Contents does not mention the York County Solid Waste and Refuse Authority (YCSWRA) at all.

OIG Response

The YCSWRA Site is not included in the Table of Contents because our findings on the site are discussed under a subsection in Chapter 2. The Table of Contents includes only major sections of the Chapters.

1 There are 46 partial deletions, not 446 partial deletions.

OIG Response

We agree and corrected this error in the report.

- 13 The first bullet should be updated to reflect the pending change to the deletions delegation.

OIG Response

We agree and updated the bullet to reflect the pending change to the delegation.

- 13 The Assessment and Remediation Division has not yet been reorganized as of May 2008.

OIG Response

An OSWER manager informed us on June 9, 2008 that the division was reorganized as of June 8, 2008. We updated the report to reflect this achievement.

- 17 Table 3.1, the heading and numbers in the last column are not needed.

OIG Response

The table was not revised because the information in the last column quantifies the difference between the sample result for each contaminant and the relevant cleanup goal.

RECOMMENDATIONS

- 2-1 Implement a quality assurance process that ensures NPL deletion decisions meet EPA guidance and NCP criteria before sites are deleted. At a minimum, the process should include the following actions by OSWER:
- a. Verification review to ensure draft final close-out reports and public notices include all information specified in EPA's deletion guidance, including cleanup goals and all confirmatory sampling results.
 - b. Verification that all appropriate site response actions have been implemented, including institutional controls, and cleanup goals have been met.
 - c. Verification that final close-out reports and deletions dockets have been completed and placed in the appropriate regional and local repositories.

We concur with recommendation 2-1. The following actions are underway or completed:

- OSWER has proposed a change in the National Priorities List site deletion delegation to require formal OSWER Headquarters concurrence on the notice of intent to delete before

the document is signed by the Regional Administrator. This concurrence role will ensure that OSWER Headquarters reviews all deletion notices and ensures that these documents are consistent with the deletion criteria specified in the NCP and outlined in EPA guidance. This would include verification that all site response actions have been implemented, including institutional controls, and that all cleanup goals have been met. The proposed change to the delegation is currently undergoing the Agency Directive Clearance Review process. Comments on the redelegation were due by May 30, 2008.

OIG Response

OSWER's planned corrective actions generally meet the intent of our recommendation. The actions should ensure that the Agency's deletion notices and decisions meet EPA and NCP criteria. However, OSWER will need to describe the verification process for ensuring final close-out reports include all information specified in EPA's deletion guidance in its response to the final report. OSWER will also need to provide a milestone, or milestones, for implementing the revised delegation and verification process. The recommendation is open until OSWER provides more information on and implements the corrective actions.

- OSWER continues to comply with the Federal Docket Management System requirements for rulemaking publications. All deletion notices are available for public review and comment through www.regulations.gov. The regions, with assistance from Headquarters, are responsible for ensuring that all supporting materials (e.g., final closeout reports) for deletion dockets are online or referenced before the notice of intent to delete is published in the Federal Register.

OIG Response

OSWER's comments on the Federal Docket Management System describe the regions' and Headquarters' responsibilities for ensuring that supporting documents for deletion dockets are online or referenced. However, the comments do not describe the Agency's controls that are in place or planned to verify that close-out reports and deletion dockets have been completed and available for review at the appropriate regional and local repositories. In its response to the final report, OSWER will need to describe these controls and provide a milestone, or milestones, for completing the corrective action. The recommendation is open until OSWER provides more information on and implements the corrective action.

- OSWER developed Federal Register deletion document templates for traditional and direct final process deletions in consultation with the Office of General Counsel, the Office of Regulatory Policy and Management and the regions. The purpose of these templates is to incorporate new Federal Docket Management System language, ensure document consistency across all regions, and ensure that all appropriate Federal Register rulemaking publication language is incorporated in the notices. These templates are

available at the following website:

http://www.epa.gov/superfund/cleanup/postconstruction/del_templates.htm

OIG Response

OSWER's templates should assist the Agency with preparing deletion notices that meet the criteria specified by EPA's deletion guidance. As discussed in the report, OSWER finalized the templates in May 2008. This corrective action has been completed. Therefore, OSWER does not need to provide additional details in its response to the final report.

- Deletions coordinators have been designated for all regions. The deletions coordinators serve as deletion experts within their office. These responsibilities include working with Superfund remedial project managers and managers to ensure that Headquarters reviews draft deletion notices and that the notices are developed using the new deletion templates. In addition, the deletion coordinators are responsible for ensuring that remedial project managers make deletion docket materials available in the Federal Docket Management System. All deletion coordinators were required to attend the Federal Docket Management System rule writer training.

OIG Response

The deletions coordinators' activities should assist the Agency with ensuring meeting deletion notification and docket criteria specified by EPA guidance. However, OSWER's comments do not include a description of the Agency's controls that are in place or planned to ensure deletion dockets have been completed and available for review at the appropriate regional and local repositories. In its response to the final report, OSWER will need to describe these controls and provide a milestone, or milestones, for completing the corrective action as discussed previously. The recommendation is open until OSWER provides more information on and implements the corrective action.

- OSWER/OSRTI is in the preliminary stages of updating the January 2000 *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). Chapters 5 and 6 document site deletion and partial deletion processes. Changes will be made to these chapters to clarify deletion requirements, update deletion docket requirements, update the deletion document review process to incorporate the Headquarters concurrence role, and provide updated deletion templates.

OIG Response

OSWER's plan to update the guidance meets the intent of our recommendation. The revisions to the guidance should assist the Agency with ensuring deletion decisions and supporting documentation meet the criteria specified in EPA guidance and the NCP. In its response to the final report, OSWER will need to provide a milestone for completing the guidance. The recommendation is open until OSWER provides a milestone date and completes the corrective action.

- OSWER continues to provide training nationwide on EPA's deletion guidance to regions. Deletion training was provided to Region 9 in January 2008, in addition to the training provided to Regions 1 and 7 in Fiscal Year 2007, as noted in the draft report.

OIG Response

OSWER's training activities should assist the Agency with ensuring deletion decisions and supporting documentation meet the criteria specified in EPA guidance and the NCP. We consider this corrective action as completed. Therefore, OSWER does not need to provide additional details in its response to the final report.

CONCLUSION

If you have any questions about these comments, please contact Elizabeth Southerland at 703-603-8855, or southerland.elizabeth@epa.gov. We look forward to receipt of the final report.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

MEMORANDUM

TO: Carolyn Copper
Director of Program Evaluation
Hazardous Site Issues
Office of Inspector General

FROM: Donald Welsh, Regional Administrator
Office of the Regional Administrator (3RA00)

SUBJECT: Second Response to the Draft Evaluation Report: *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*

Attached is the second response on the draft OIG evaluation report, *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*. Outlined below are the **clarifying** responses to the Office of Inspector General's ("OIG") Draft Evaluation Report dated May 8, 2008. The OIG's Report found that in two of the four Region 3 Sites reviewed, the deletion was inconsistent with EPA guidance and criteria. The purpose of this memorandum is to provide a written response to the OIG's proposed recommendations by Chapter with respect to two Region 3 Sites, McAdoo Associates and York County Solid Waste and Refuse Authority Landfill. Region 3 has previously responded to the OIG's Discussion Draft Findings and Region 3 staff and managers have had multiple follow-up discussions with respect to these findings which has lead to the OIG's Draft Evaluation Report. Therefore, the Region does not believe any further response to the OIG's findings is necessary.

Chapter 2: Superfund Site Deletions Have Not Always Been Consistent with EPA Criteria

2-2 Issue amendments to EPA's ROD and the final close-out report that document the change in the remedy and provide appropriate support for the deletion decision for the McAdoo Associates site.

Response: **Regions 3 does not concur that a ROD Amendment is necessary or that the final closeout report should be amended. However, Region 3 is preparing a Second Explanation of Significant Differences that will document necessary changes to the remedy and clarify the information which supports the Region's decision to delete the Site. Upon completion, the ESD will be placed in the Administrative Record and Deletion Docket for the Site. The planned completion date for the ESD is December 30, 2008.**

OIG Response

We discussed Region 3's response for Recommendation 2-2 with the Region's managers and staff during July 2008. As a result of this discussion, the Region agreed to provide the OIG with a revised response, which it did on August 6, 2008. This revised response and our evaluation of it are on pages 46 and 47 of this report.

- 2-3 Complete a deletion docket for the YCSWRA site and place copies in appropriate regional and local repositories. Also, complete a final close-out report for the Site after all response actions are successfully completed and cleanup goals are met as specified by EPA's ROD

Response: Region 3 concurs with this recommendation. Region 3 acknowledges that it was unable to locate the deletion docket for YCSWRA in the appropriate regional and local repositories and will ensure a complete docket will be placed no later than September 30, 2008. In addition, a Final Close Report will be completed and included as recommended by the OIG by September 30, 2008.

OIG Response

Region 3's planned corrective actions meet the intent of our recommendation. The recommendation is open with agreed-to actions pending.

- 2-4 Conduct an analysis to determine whether the current groundwater response action at the YCSWRA Site provides the same level of protection to human health and the environment as the response specified in EPA's ROD prior to its modification in 1994. If the current response is less protective, reinstate appropriate response requirements in EPA's ROD for the Site.

Response: Region 3 concurs with this recommendation. As the OIG stated in their Report, Region 3 completed the scheduled Five Year Review for the Site in September 2007. In the September 2007 Five Year Review, Region 3 deferred the protectiveness statement for the Site until further monitoring was conducted with respect to the surface water, sediments, wetlands, and vapor intrusion. EPA has met with the YCSWRA and they have agreed to conduct the necessary sampling. The sediment and surface water sampling is scheduled for June 2008. If the data indicate existing conditions are not protective, EPA will take the necessary remedial actions. With respect to the Vapor Intrusion sampling, the YCSWRA is preparing a workplan and is currently working with the residents to get access to conduct the sampling. A

final schedule for the sampling has not yet been determined and will be provided when access to the residential homes has been acquired.

OIG Response

Although Region 3 concurred with the recommendation, its planned actions do not completely address the recommended corrective action. We also note that the modification date for the ROD was incorrect in the draft report. The Region issued the modification in 2004 rather than 1994 as cited in the report. Therefore, we made appropriate revisions to the final report to correct this error. The Region's planned actions address monitoring and vapor intrusion issues identified by the 2007 5-year review. The 2007 5-year review did not evaluate whether the current response action for the groundwater contamination at the site is protective to human health and the environment. In its response to the final report, the Region will need to describe actions taken or planned to ensure that the groundwater response provides the same level of protection to human health and the environment as the response specified in EPA's ROD prior to its modification. The Region will also need to provide a milestone, or milestones, for completing the recommended corrective action. The recommendation is open until the Region provides more information on and completes the corrective actions.

2-5 Correct the inconsistency between the cleanup goals for the current groundwater response for the YCSWRA site and the cleanup requirements specified in EPA's ROD.

Response: Region 3 concurs that there is an inconsistency between the cleanup goals required by the 1984 agreement between the YCSWRA and PADER (1984 PADER Agreement) and EPA's ROD. Region 3 is currently reviewing the analytical data/sampling results to ensure that all chemicals of concern are being monitored. In the event that there are still chemicals of concern present in groundwater above the cleanup standards defined by the ROD, EPA will determine if a decision document is necessary to correct this inconsistency.

OIG Response

Region 3's corrective actions that are in progress and planned meet the intent of our recommendation. In its response to the final report, the Region will need to provide a milestone, or milestones, for completing the corrective actions. The recommendation is open with agreed-to actions pending.

2-6 Resolve the groundwater monitoring and vapor intrusion issues discussed in EPA's 2007 5-year review report for the Site by no later than December 2009.

Take appropriate corrective actions to address any unacceptable human health and/or ecological risks identified from the groundwater monitoring and vapor intrusion investigation.

Response: EPA concurs and is working with the YCSWRA to address the FYR recommendations.

OIG Response

Region 3's corrective actions taken and planned that are discussed under Recommendation 2-4 meet the intent of this recommendation. The Region will need to provide a milestone, or milestones, for completing the vapor intrusion assessment. The recommendation is open with agreed-to actions pending.

2-7 Increase EPA's monitoring activities for the YCSWRA Site to ensure that the remedy is progressing towards meeting the cleanup requirements specified by EPA's ROD and remains protective of human health and the environment. At a minimum, annually review groundwater monitoring data and conduct Site visits to verify cleanup progress, compliance with cleanup requirements, and Site conditions.

Response: Region 3 does not concur with this recommendation. Region 3 does not believe that additional oversight beyond what currently exists is necessary. The YCSWRA is very responsive to Region 3 and has provided the monitoring data required by the approved Response Action Plan. EPA has conducted the routine Five Year Reviews at the Site and has identified issues which will be acted upon.

OIG Response

We discussed Region 3's response for Recommendation 2-7 with the Region's managers and staff during July 2008. As a result of this discussion, the Region agreed to provide the OIG with a revised response, which it did on August 6, 2008. This revised response and our evaluation of it are on page 47 of this report.

Chapter 3: EPA Has Not Ensured Appropriate Response Actions Have Been Implemented at Some Deleted Sites

3-1 Work with the State of Pennsylvania to ensure that necessary response actions are taken under the appropriate regulatory authority to address groundwater contamination at Operable Unit 2 of the McAdoo Associates site. The response

actions should include appropriate controls limiting human exposure to the groundwater.

Response: **Region 3 concurs with this recommendation. EPA issued recommendations in the 2005 Five Year Review for the McAdoo Site, and is currently working with PADEP to implement those recommendations. PADEP is currently performing an investigation of the remaining petroleum contamination present at the Site. Once the extent of the petroleum contamination is determined, PADEP will assess whether or not vapor intrusion may be an issue at the Site. Although institutional controls do exist in the form of a Protective Purchaser Agreement established for the Site between EPA and the current property owner, EPA will work with the Office of Regional Counsel, PADEP and the property owner to determine what additional controls are necessary and ensure that they are established, as appropriate. A meeting to discuss the appropriate controls is scheduled for July 2008 with the Office of Regional Counsel.**

OIG Response

Region 3's comments and corrective actions that are in process and planned do not completely address the recommendation. The Region's comments do not describe how vapor intrusion will be addressed if the Pennsylvania Department of Environmental Protection's (PADEP's) investigation determines that a response is necessary to protect the health of residents living near the site. The comments also do not include a milestone or milestones for completing the corrective actions. The Region will need to provide additional details on actions taken and/or planned, along with a milestone, or milestones, for completing the corrective actions in its response to the final report. The recommendation is open until the Region implements the corrective actions.

3-2 Re-evaluate groundwater monitoring requirements at Operable Unit 2 of the McAdoo Associates site under the appropriate regulatory authority. Require that the monitoring program include a sufficient number of monitoring wells to fully characterize the groundwater contamination.

Response: **Region 3 concurs with this recommendation. As described above, EPA has been working with PADEP to evaluate groundwater contamination at the Blaine Street portion of the Site. As Region 3 has previously stated in the deletion documents and has recently confirmed with analytical data, the remaining contamination at the Site is petroleum related with the exception of Bis (2-ethylhexyl) phthalate which occurs sporadically in groundwater above the cleanup standard in the ROD. EPA believes that there is already a sufficient number of monitoring wells to fully characterize the Bis (2-ethylhexyl) phthalate groundwater contamination at the Blaine Street**

property. However, PADEP may determine that additional monitoring wells are necessary to define the extent of the petroleum contamination.

OIG Response

Region 3's corrective actions that are in process and planned do not completely address the recommendation. The Region's comments do not describe how it determined that there are sufficient monitoring wells to characterize Bis (2-ethylhexyl) phthalate in the groundwater. In its response to the final report, the Region will need to provide additional details on actions taken and/or planned to address the recommendation. The final response will also need to include a milestone, or milestones, for completing the corrective actions. The recommendation is open until the Region provides more information on and the corrective actions and the actions are fully implemented.

3-3 Require that any changes to the current monitoring requirements specified in the ROD for Operable Unit 2 of the McAdoo Associates site be incorporated into appropriate decision document.

Response: Region 3 concurs and as previously stated intends to clarify groundwater monitoring requirements into the Second Explanation of Significant Differences. Region 3 plans to issue the Second Explanation of Significant Differences by December 30, 2008.

OIG Response

Region 3's planned corrective action meets the intent of our recommendation. This recommendation is open until the Region incorporates changes to the current monitoring requirements into the Explanation of Significant Differences.

3-4 Conduct visits to Operable Unit 2 of the McAdoo Associates site at least annually to verify that site conditions remain protective to human health and the environment.

Response: Region 3 concurs with the OIG's recommendation.

OIG Response

Region 3's planned corrective actions meet the intent of our recommendation. However, the Region will need to provide a schedule for completing the site visits in its response to the final report. The recommendation is open with agreed-to actions pending.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

MEMORANDUM

TO: Carolyn Copper
Director of Program Evaluation
Hazardous Site Issues
Office of Inspector General

FROM: Donald Welsh, Regional Administrator
Office of the Regional Administrator (3RA00)

SUBJECT: 3rd Response to the Draft Evaluation Report: *EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review*

As you know the Region has responded to the Office of Inspector General's ("OIG") Draft Evaluation Report dated May 8, 2008 on two previous occasions, June 4, 2008 and June 20, 2008. The OIG's Report found that in two of the four Region 3 Sites reviewed, the deletion was inconsistent with EPA guidance and criteria. The purpose of this memorandum is to provide a revised written response to two of the OIG's proposed recommendations. I hope that this final clarification addresses the OIG's questions regarding the Region 3 response.

Chapter 2: Superfund Site Deletions Have Not Always Been Consistent with EPA Criteria

2-2 Issue amendments to EPA's ROD and the final close-out report that document the change in the remedy and provide appropriate support for the deletion decision for the McAdoo Associates site.

Response: **Region 3 concurs that a remedy modification is necessary and is preparing a Second Explanation of Significant Differences that will document necessary changes to the remedy and clarify the information which supports the Region's decision to delete the Site. This Second ESD will include a 30-day Public Comment Period, and will be also be submitted to PADEP for concurrence. Additionally, Region 3 will prepare an attachment to the Final Close-Out Report that will provide supporting documentation and clarify the Region's decision to delete the site.**

OIG Response

Region 3's corrective actions that are in progress and planned meet the intent of our recommendation. In its response to the final report, the Region will need to provide a milestone, or milestones, for completing the Explanation of Significant Differences after the public comment period and attachment to the final close-out report. The recommendation is open with agreed-to actions pending.

- 2-7 Increase EPA's monitoring activities for the YCSWRA Site to ensure that the remedy is progressing towards meeting the cleanup requirements specified by EPA's ROD and remains protective of human health and the environment. At a minimum, annually review groundwater monitoring data and conduct Site visits to verify cleanup progress, compliance with cleanup requirements, and Site conditions.

Response: Region 3 concurs, and has implemented the IG's recommendations. The YCSWRA has been very responsive to requests for additional monitoring. EPA has conducted the routine Five Year Reviews at the Site and has identified issues which will be acted upon to ensure the remedy remains protective and is functioning as intended by the ROD. The Region is in the process of implementing the recommendations that were generated as a result of the Five Year Review and will document their outcome in an Addendum to the Five Year Review Report.

OIG Response

Region 3's corrective actions that are in progress and planned meet the intent of our recommendation. In its response to the final report, the Region will need to provide an implementation date for the annual review of the groundwater monitoring data and a schedule for its visits to the YCSWRA site. The recommendation is open until the corrective actions are fully implemented.

R-19J

MEMORANDUM

SUBJECT: U.S. EPA, Region 5 Response to the Office of Inspector General's
May 8, 2008 Draft Evaluation Report: "EPA Decisions to Delete Superfund Sites
Should Undergo Quality Assurance Review"

FROM: Bharat Mathur
Acting Regional Administrator

TO: Carolyn Copper
Director of Program Evaluation
Hazardous Waste Site Issues
Office of Inspector General

Thank you for giving the U.S. Environmental Protection Agency, Region 5 the opportunity to comment on the May 8, 2008, draft of the Office of Inspector General's Evaluation Report titled "EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review", transmitted to our office by electronic mail on May 8, 2008, by Michael Owen of your office. A part of your evaluation focused on the deletion of the Kummer Sanitary Landfill Site from the National Priorities List (NPL) in 1996. We are responding to the findings and recommendations cited in your draft evaluation report.

It continues to be the Region's position that the Kummer Sanitary Landfill Site was appropriately deleted from the NPL in accordance with the "Agreement Between the United States Environmental Protection Agency and the Minnesota Pollution Control Agency Regarding Qualified Municipal Waste Landfills Under the Minnesota Landfill Cleanup Law" signed by EPA, Region 5 and the Minnesota Pollution Control Agency (MPCA) in August of 1995 (Minnesota Landfill Agreement or Agreement).

Under the terms of the Minnesota Landfill Agreement, EPA proposed the deletion of landfills that would be addressed by the State of Minnesota under the Minnesota Landfill Cleanup Law, Minn. Stat. §§ 115B.39 to 115B.46. Section I of the Agreement sets out a specific process and schedule for deletion of qualified landfills from the NPL. To date, EPA has deleted nine Minnesota landfills in accordance with the Agreement. Prior to Region 5's execution of the Agreement, its terms were reviewed and approved by the Department of Justice, and EPA's Office of Enforcement and Compliance Assurance (OECA) and Office of Solid Waste and Emergency Response (OSWER). The provisions concerning deletion from the NPL were a focal point for OECA and OSWER review. In August 1995, OSWER and OECA issued a joint memorandum which endorsed the NPL deletion provisions, explaining that "[n]o further response under CERCLA will be appropriate at any of these sites because the State of Minnesota

has guaranteed to take any further response actions necessary under the Minnesota Landfill Cleanup Law.”

The OIG Report asserts that Region 5 was unable to ensure that the response actions at the Kummer Sanitary Landfill Site provide long-term protection to human health and the environment. Region 5 disagrees with this conclusion. Long-term protection to human health and the environment was assured by virtue of the designation of the Kummer Sanitary Landfill Site as a qualified landfill under the MPCA Closed Landfill Program. That designation meant that all further response at the Kummer Sanitary Landfill Site would be conducted by MPCA using funds supplied under the Minnesota Landfill Cleanup Law. EPA policy acknowledges that, even if cleanup at a site is incomplete, NPL deletion is appropriate where another authority can be used to bring about remediation at the site and further CERCLA action is not needed. That is the case at the Kummer Sanitary Landfill Site. EPA’s deferral of the Site to the MPCA Closed Landfill Program assumed that implementation of a remedy at the Kummer Sanitary Landfill Site and future remedial decisions concerning the Site would be the responsibility of MPCA. EPA’s role would be to periodically assess the remedy through the Five-Year Review process.

OIG Response

Under the 1995 the Minnesota Landfill Agreement, the State was required to implement the groundwater response specified by EPA’s ROD after the site was deleted from the NPL. The ROD disclosed that a response was necessary to protect human health and the environment. Because the State had not implemented the active gas extraction system specified by the ROD, we were not able to determine whether the State’s response has been at least as protective as the remedy required by the ROD. We also found that the Region’s periodic assessments of the State’s response actions had not ensured that the State had fully implemented the groundwater remedy specified by the ROD.

The OIG Report notes that the remedy that MPCA is currently implementing at the Kummer Sanitary Landfill Site differs from the one selected in a Record of Decision (ROD) EPA issued in 1995. The Report views this as a failure to ensure that MPCA fully implement the groundwater remedy specified by EPA’s ROD. Region 5 views this rather as a failure to amend the ROD to reflect changes that both MPCA and the Region agreed were appropriate. However, Region 5 does agree that the ROD and the remedy should match, and will take steps to bring this about, as described below.

OIG Response

Our review of the Region's site files during the evaluation did not reveal any documentation showing that EPA and the State had reached a formal agreement to implement a groundwater response that was different from the remedy required by the ROD. We also agree that the groundwater response at the site should match requirements specified by the ROD.

Response to OIG Recommendations:

Recommendation 2-8:

Complete a deletion docket for the Kummer Sanitary Landfill Site and place copies in appropriate regional and local repositories.

A deletion docket for the Kummer Sanitary Landfill Site has been completed by EPA, Region 5, with copies placed at the EPA Region 5 Docket Office and at the local information repository located at the Bemidji City Library, 6th and Beltrami, Bemidji, Minnesota 56601.

OIG Response

Region 5's corrective action meets the intent of our recommendation. In its response to the final report, the Region will need to provide the completion date for the deletion docket and the date or dates the docket was placed in the regional and local repositories. The recommendation is open until the Region provides this milestone information.

Recommendation 3-5:

Ensure that EPA's 5-year review scheduled for March 2008, evaluates the protectiveness of the groundwater remedy at the Kummer Sanitary Landfill Site. Document any changes to the remedy for groundwater through an appropriate ROD revision after the 2008 5-year review is completed.

The Second Five-Year Review for the Kummer Sanitary Landfill Site was completed on March 13, 2008. The Five-Year Review evaluated the protectiveness of the groundwater remedy and found that natural attenuation is successfully reducing the concentrations of the remaining chemicals of concern that still exceed Safe Drinking Water Act Maximum Contaminant Levels and that the remedy is considered to be protective of human health and the environment in the short term. Long-term protectiveness requires implementation, maintenance, and compliance with groundwater use restrictions and other institutional controls until the cleanup standards are met. In addition, the Five-Year Review included as a recommendation and follow-up action the issuance of a decision

document within a year, identifying Monitored Natural Attenuation as the site groundwater remedy.

OIG Response

Region 5's corrective actions taken and planned meet the intent of our recommendation. However, Region 5 will need to provide a specific milestone for issuing the revision to the ROD in its response to the final report. The recommendation is open until the Region provides the milestone information and issues the revision to the ROD.

Recommendation 3-6:

Require the State of Minnesota to implement, operate, and maintain the groundwater remedy specified by the ROD for the groundwater at the Kummer Sanitary Landfill Site.

EPA, Region 5 has been reviewing the cleanup status of the Kummer Sanitary Landfill Site, and the status of all sites that were deleted from the NPL under the 1995 Agreement between EPA and the State of Minnesota regarding qualified municipal landfills. MPCA sends annual monitoring reports to EPA, Region 5 and Five-Year Reviews are conducted to ensure the protectiveness of the selected remedy. Paragraph II.G. of the agreement between EPA and the State, "Application of CERCLA at Qualified Landfills with Notice of Compliance," states that "EPA agrees to refrain from taking or requiring response action or commencing a PRP search at a qualified landfill for which a notice of compliance has been issued under the Act, unless EPA finds that the State is not carrying out its response action responsibilities under the Act at the qualified landfill in a manner that will result in response actions that are at least as protective of human health and the environment as response actions required under CERCLA." EPA, Region 5 will continue to coordinate with MPCA on the status of the Kummer Sanitary Landfill Site, and all deleted NPL sites included in their Closed Landfill Program.

OIG Response

We contacted the Region and requested clarification on its comments. We also explained to the Region that requiring the implementation of a remedy specified by an appropriate revised ROD would meet the intent of the recommendation. After this explanation, the Region informed us on July 17, 2008, that it agreed with the recommendation. The Region also stated on that same date that, as recommended by the March 2008 5-year review, it will be working with the State of Minnesota to modify the latest ROD to reflect the remedy currently being implemented at the site. In its response to the final report, the Region will need to provide a specific milestone for issuing the revision to the ROD. The recommendation is open until the Region issues the revision to the ROD.

Thank you once again for the opportunity to respond to the draft of the OIG Evaluation Report titled "EPA Decisions to Delete Superfund Sites Should Undergo Quality Assurance Review". If you have any questions about this response, please contact Gladys Beard of my staff, the Region 5 Deletions Coordinator at 312-886-7253, or Donald Bruce of my staff at 312-886-7241.

cc: Susan Parker Bodine, OSWER
Barry Breen, OSWER
James Woolford, OSRTI
Donald S. Welsh, Region 3

Appendix D

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