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

AUG 29 2003

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

OSWER #9355.0-94

MEMORANDUM

SUBJECT: Release of Summary Report for FY 2000 and FY 2001 for the Superfund Administrative Reform "Updating Remedy Decisions"

FROM: for Michael B. Cook, Director
Office of Superfund Remediation and Technology Innovation

TO: Superfund National Policy Managers, Regions 1 - 10

We are distributing electronically the third in a series of two-year reports, which summarize the progress made through implementation of the Superfund Administrative Reform entitled Updating Remedy Decisions during FY 2000 and FY 2001. This document can be accessed at the following Superfund Reforms web site: http://www.epa.gov/oerrpage/superfund/programs/reforms/docs/

Since this reform was announced on October 5, 1995, the Superfund program continuously tracked national progress updating remedies. The following statistics concerning the progress of this reform are included in this summary report:

- Cumulatively, from FY 1996 through FY 2001, EPA has updated over 415 remedies, reducing estimated future cleanup costs by more than $1.7 billion, while at the same time increasing estimated future cleanup costs by only about $225 million.

- Specifically, for FY 2000 and FY 2001, EPA updated 111 remedies, reducing estimated future cleanup costs by more than $265 million, while at the same time increasing estimated future cleanup costs by about $100 million.

- For FY 2000 and FY 2001, half of ten EPA Regions have accumulated estimated savings in excess of $50 million.

- For FY 2000 and FY 2001, about two-thirds of the remedy updates were initiated by parties outside of EPA . About two-thirds of the remedy updates were documented with Explanations of Significant Differences, not Record of Decision (ROD) Amendments.

These results clearly show that measurable progress continues to be made by implementing this reform. The results also show a maturation of this reform over time. Originally, Regions and outside parties identified numerous remedy updates which generated high estimated savings. Today, we see more remedy updates which generate lower estimated cost savings and, in some cases, an increase in the frequency of updates which result in higher estimated costs than the original remedy.

The data contained in this report was accumulated by contacts in each region and then forwarded to headquarters for national tracking. The bulk of this report consists of two large Appendices, which give site-specific details on each remedy update completed during this two-year period. Much of the data we track was part of a congressional inquiry received during the initial stages of the reform. This data is used for tracking purposes only. This document is not a substitute for EPA's statutes, regulations or guidance, and does not impose requirements or policy changes with regards to remedy selection.

For further information on this reform, please contact Matt Charsky of my staff at Charsky.matthew@epa.gov or (703) 603-8777.

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United States
Environmental Protection
Agency

Updating Remedy Decisions at Select Superfund Sites Biannual Summary Report FY 2000 and FY 2001

February 2003

Cumulative Summary (FY96–FY01)

Since its inception, *Updating Remedy Decisions* has continued to significantly impact Superfund sites across the country. From FY96 - FY99, there were 307 remedy updates reducing future cleanup costs by more than $1.4 billion while at the same time increasing estimated future cleanup costs by about $128 million. In FY00 and FY01, EPA updated more than 110 remedies, reducing estimated future cleanup costs by more than $265 million while at the same increasing estimated future cleanup costs by about $100 million. By including the FY00 and FY01 data, the cumulative totals for FY96–FY01 are 418 remedy updates reducing future cleanup costs by more than $1.7 billion while at the same time increasing estimated future cleanup costs by about $228 million.

Executive Summary (FY00–FY01)

During FY00 and FY01, *Updating Remedy Decisions* continued to be one of EPA's most successful Superfund reforms. The key successes and findings include the following:

- Most remedy updates completed during FY00 and FY01 were the result of additional technical information gathered as part of the remedy design process. A small number of remedy updates were the result of non-technical changes in the applicable or relevant and appropriate requirements (ARARs), land use, or required cleanup levels. Another small number of remedy updates were the result of State input or community preference which focused on either technical or non-technical modifications to the remedy.
- EPA tracked all remedy updates during FY00 and FY01, most of which were reform-related. In FY00, the total estimated cost savings for remedy updates were in excess of $185 million, all of which was based on scientific and technological advancements. For remedy updates completed in FY01, the total estimated cost savings were in excess of $84 million, all of which was based on scientific and technological advancements. There were 10 remedy updates in FY00 that resulted in cost increases totaling an estimated $87.7 million, and there were 6 remedy updates in FY01 that resulted in cost increases totaling an estimated $12.5 million.
- Estimated cost savings for 111 individual remedy updates during FY00 and FY01 ranged from a negligible amount to over $75 million, with most remedy updates generating savings under $10 million. There were also 16 remedy updates that resulted in estimated cost increases of over $100 million, with a majority under $2 million.
- Remedy updates generally occurred in the remedial design phase of the cleanup process and were more likely to be documented with Explanations of Significant Differences (ESDs) than Record of Decision (ROD) Amendments. Over the two-year period, there were 70 ESDs and 41 ROD Amendments representing remedy updates with both cost savings and increases.
- Most remedy updates during FY00 and FY01 were initiated by parties outside of EPA *(e.g.*, potentially responsible parties (PRPs), States, communities, Federal facilities). Over the two-year period, parties outside of EPA initiated 66 updates and EPA initiated 55 updates (these numbers do not include 38 updates initiated by more than one party).
- Over the two-year period, the most commonly addressed medium was ground water (68 updates) followed by soil (59 updates). Nine other media types were addressed by remedy updates during FY00 and FY01.

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1.0 Introduction

Updating Remedy Decisions, announced in the third round of Superfund Reforms in October 1995, is one of a broad range of administrative reforms undertaken to improve the efficiency, speed, and fairness of the Superfund program. Specifically, the Reform encourages the Regions to revisit selected remedy decisions at sites where significant new scientific information, technological advancements, or other considerations will protect human health and the environment while enhancing overall remedy cost effectiveness.

This report contains an evaluation of remedy updates completed during FY00 and FY01 and is the third biannual Summary Report since the reform was announced. Previous remedy update reports may be found as indicated below.

For remedy updates completed in FY96 and FY97, see the document, "*Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 1996 and FY 1997*," July 1998, OSWER Directive 540-R-98-017 on EPA's website listed below. The Summary Report for FY96 and FY97 contains the background information of the Reform, a description of the Reform, the process for implementing the Reform, and Regional implementation plans from each of the ten EPA Regions.

For remedy updates completed in FY98 and FY99, see the document "*Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 1998 and FY 1999,*" March 2001, OSWER Directive 540-R-01-00 on EPA's web site listed below.

Finally, to find a cumulative summary of this reform as well as trends during fiscal years 1996 through 1999, see the document, *"Updating Remedy Decisions at Select Superfund Sites Cumulative Summary Report FY 1996 Through FY 1999,"* March 2001, OSWER Directive 9355.0-77 on EPA's web site listed below.

The FY00 and FY01 report:

- Provides a summary of Superfund sites where remedies have been updated;
- Highlights estimated future cost reductions (cost savings) or cost increases expected to result from updated remedies; and
- Presents stakeholders with information on the role of remedy updates in improving Superfund implementation.

Since this reform was announced, EPA sought to encourage remedy updates that would incorporate such new information into existing site cleanups. As a whole, reforms were implemented to make Superfund faster, fairer, and more efficient.

It is important to emphasize that this initiative does not signal any variations in the Agency's current policies regarding site cleanup, including policies regarding remedy selection, treatment of principal threats, preference of permanent remedies, establishment of cleanup levels, or the degree to which remedies must protect human health and the environment. EPA remains committed to the protection of public health, welfare, and the environment as provided in CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

For Previous Remedy Update Reports, visit these Web sites:

For remedy updates completed in FY96 and FY97 see:
http://www.epa.gov/oerrpage/superfund/programs/reforms/docs/urd96-97.pdf

For remedy updates completed in FY98 and FY99 see:
http://www/epa.gov/oerrpage/superfund/programs/reforms/docs/biannual.pdf

For remedy updates FY96 through FY99 see:
http://www.epa.gov/superfund/programs/reforms/docs/cumulat.pdf

2.0 FY00 and FY01 Results

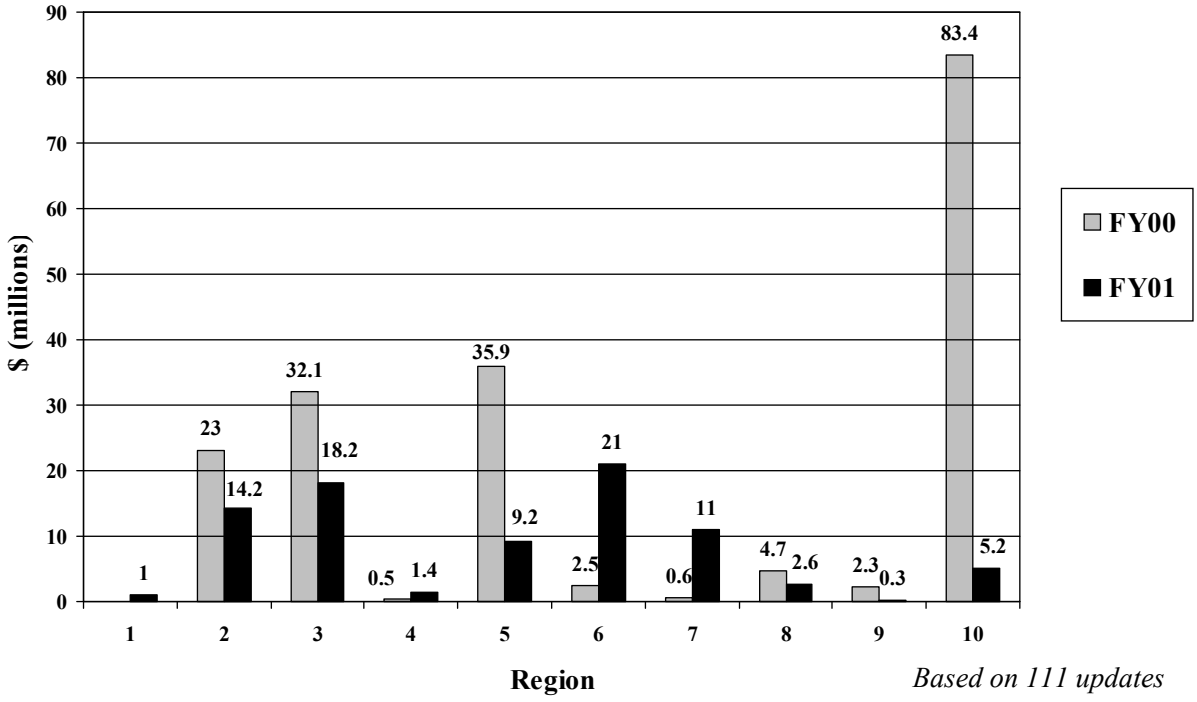
EPA completed approximately 111 remedy updates in FY00 and FY01, saving over $265 million in estimated site cleanup costs, while at the same time creating increases in estimated site cleanup costs of only about $100 million.

Updates during FY00 resulted in a total estimated cost savings of over $185.0 million, all of which resulted from updates of the kind identified in the Reform Guidance. Updates during FY01 resulted in a total estimated cost savings of over $84.0 million, all of which resulted from updates of the kind identified in the Reform Guidance.[1]

The estimated cost savings per update ranged from a negligible amount to $75.0 million, with all EPA Regions reporting savings in each year reviewed. *Exhibit 2.1* shows the amount of savings, by fiscal year, among the EPA Regions. *Exhibit 2.2* shows the amount of estimated savings for both fiscal years. (Note: *Exhibit 2.2* may not include all remedy updates from FY00 and FY01 because of limitations on EPA Regional accessibility to non-EPA remedy update information.)

Most of the remedy updates generated savings of less than $10.0 million per update, as shown in *Exhibit 2.2*. (Note: Cost estimates for several remedy updates are either unavailable to EPA or incomplete at the time of this writing. These are labeled NA/TBD (Not available/ To be determined) in Appendices A, A.1 and A.2.)

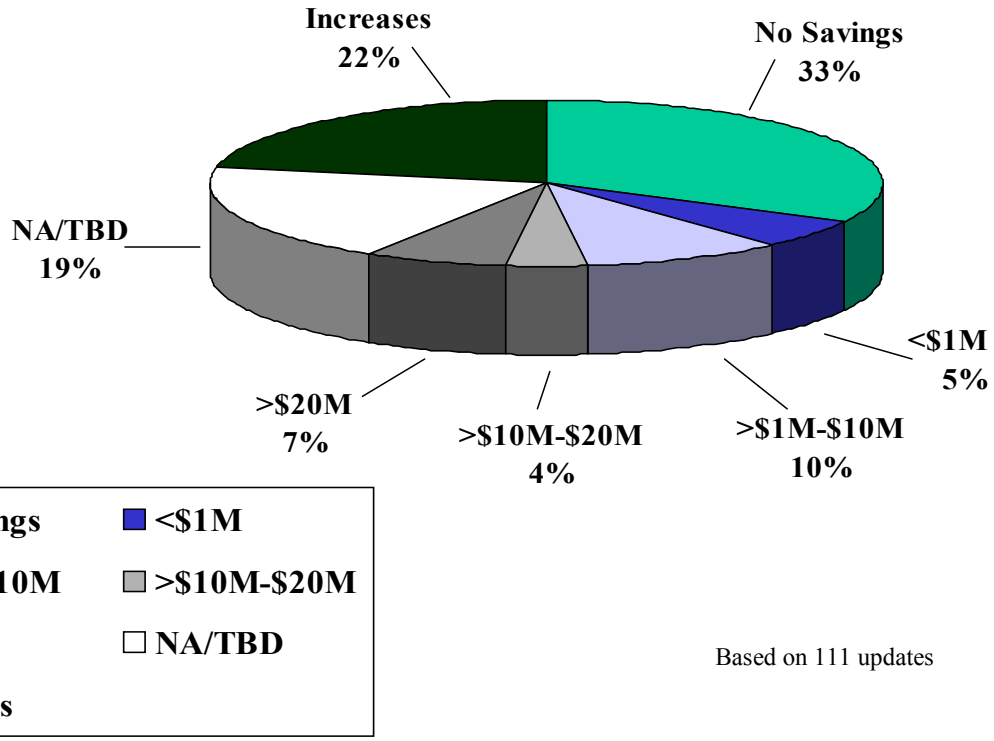
Exhibit 2.1:
Estimated Remedy Update Savings by Region in FY00 and FY01



Based on 111 updates

[1](See the Reform Guidance, "Superfund Reforms: Updating Remedy Decisions," OSWER Directive 9200.2-22, dated September 27, 1996, at EPA's website: **http://www.epa.gov/oerrpage/superfund/programs/reforms/remedy/index.htm**.)

Exhibit 2.2:
Estimated Savings Per Remedy Update in FY00 and FY01



Based on 111 updates

EPA Regions also reported on updated remedies that generated cost increases during FY00 and FY01. The FY00 cost increases for 10 remedy updates totaled $87.7 million. The FY01 cost increases for 6 remedy updates totaled $12.5 million. Most of these remedy updates generating estimated cost increases during FY00 and FY01 were less than $2.0 million per update. The remedy update cost increase for FY00 and FY01 occur in eight EPA Regions and no EPA Region has more than four increases over the two-year period.

Recent advances in the area of soil and ground water science and remediation made remedies involving these media good candidates for remedy updates. *Table 2A* shows that during FY00 and FY01, updates of ground water remedies were the most common (68 updates), followed by soil remedies (59 updates). The remaining updates pertained to nine other media, as

Table 2A:
Remedy Updates by Medium in FY00 and FY01

Medium	FY00	FY01	Total
Ground Water	43	25	68
Soil	32	27	59
Sediment	2	5	7
Debris	4	0	4
Surface Water	3	1	4
Sludge	3	0	3
Leachate	2	1	3
Solid Waste	3	0	3
Wetlands	2	0	2
Air	1	0	1
Other (Slag)	1	0	1

Table 2B:
Number and Type of Remedy Updates in FY00 and FY01

	FY00	FY01	Total
Total # of Remedy Updates	64	47	111
# Updates With Estimated Savings	37	20	57
# Updates With No Savings	14	10	24
# Updates With Estimated Increases	10	6	16
# Updates NA or TBD	3	11	14

depicted in *Table 2A*. These media are consistent with media typically found at contaminated Superfund sites.

More detailed information regarding remedy updates completed in FY00 and FY01 can also be found in Appendices A, A.1 and A.2. Specific remedy updates are listed by Region and site, and include the following information:

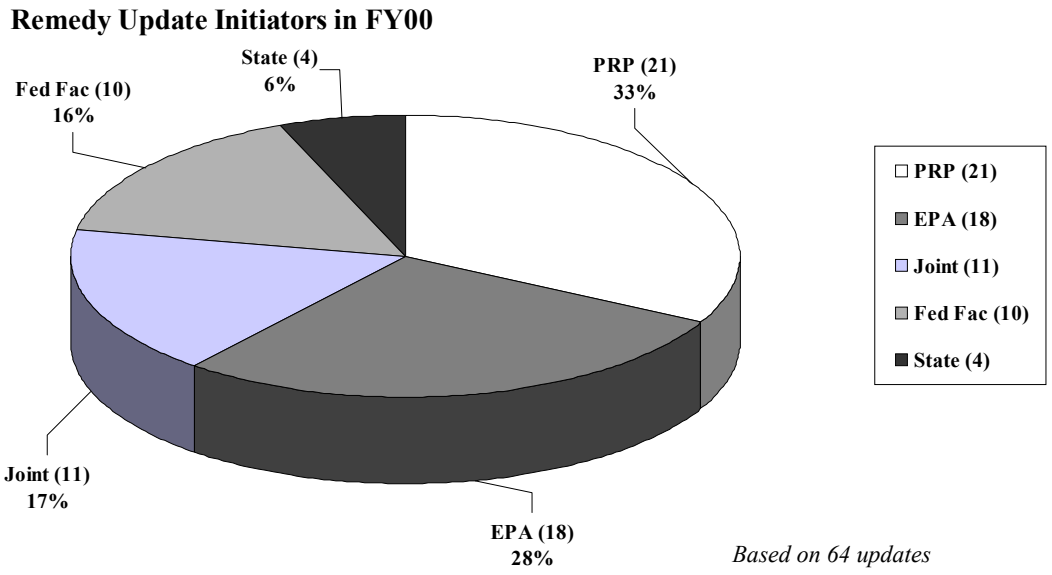
- Type and date of remedy update;
- Update initiator;
- Media involved;
- State and community involvement;
- Estimated resource demands;
- Estimated cost savings or cost increases; and
- Summary of remedy change and factual basis.

Table 2B depicts the number and kind of remedy updates that were completed in FY00 and FY01. It shows that not all remedy updates generated cost savings or cost increases. In some cases, the remedy updates generated neither cost savings nor cost increases; in other cases, the numbers are yet to be determined or were unavailable at the time of this report. Because all values are not included in this report, the summary totals are conservative values for estimated cost savings and increases. The data do not differ significantly from FY00 to FY01.

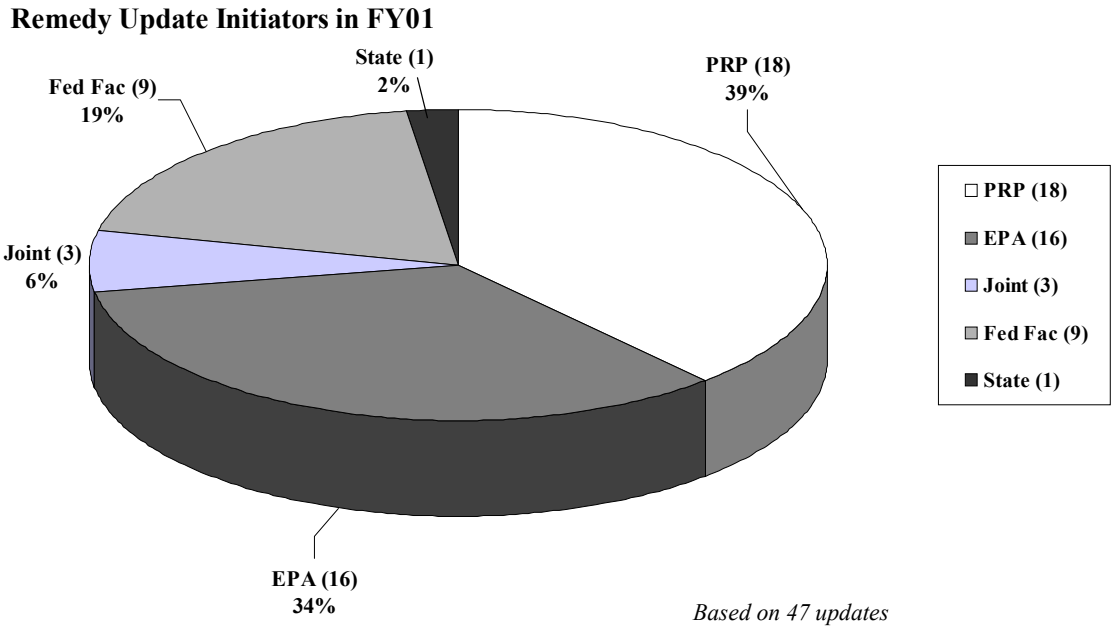
3.0 Remedy Update Initiators

After a remedy decision has been completed at a site (*i.e.*, a ROD is signed), new information may be received or generated that could affect how the remedy selected in the ROD should be implemented. This information may be supplied by a PRP, a Federal agency conducting the cleanup, the support agency (*e.g.*, another Federal agency or State/Tribe), or the public or other interested parties. Data for FY00 and FY01 indicate that 63 remedy updates were initiated by parties outside of EPA (*e.g.*, PRPs, States, communities, Federal facilities) compared to 34 updates initiated by EPA (see *Exhibit 2.3*). In addition, 14 remedy updates have joint initiators because information arrived simultaneously from several different parties. *Exhibit 2.3* shows that the relative percentages of remedy update initiators were not significantly different from FY00 to FY01.

Exhibit 2.3:
Remedy Update Initiators in FY00 and FY01



Based on 64 updates



Based on 47 updates

3.1 Remedy Update Type

Generally, the type and scope of change will determine which of the following documents EPA uses to update the remedy: memorandum or note to the Administrative Record for a non-significant or minor change; an ESD for a significant change; or a ROD-Amendment for a fundamental change.

For background information on remedy update type, see *"A Guide to Proposing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents,"* OSWER Directive No. 9200.1-23P (July 1999). Enforcement decision documents may also need to be modified, depending on the type of remedy update and the language in the order or consent decree, if there is an order or consent decree.

As shown in *Table 2C*, there were 70 ESDs and 41 ROD Amendments completed during FY00 and FY01. There were no minor changes completed during FY00 and FY01.

In general, more remedy updates occur during remedy design and represent a significant but not fundamental change to the remedy. More remedy updates also correspond to at least one of the following situations: the scope of the remedy has changed (*e.g.*, volume increase or decrease); the performance of the remedy can be modified or optimized (*e.g.*, change in disposal or discharge point); or there is a more cost effective way to implement the remedy.

Table 2C:
Types and Percentages of Remedy Updates in FY00 and FY01

	FY00	FY01	Total
ESDs	39 (56%)	31 (44%)	70
ROD Amendments	25 (61%)	16 (39%)	41

3.2 State/Tribal and Community Roles

Most remedy updates in FY00 and FY01 involved State participation and/or community involvement. Although the initiation of a formal public comment period is required only in the case of a fundamental update (*i.e.*, ROD Amendment), most remedy updates, regardless of their significance, have a substantial community involvement component (see NCP Section 300.435(c)(2)(i) and (ii)). For example, documents pertaining to the site, including any information on remedy updates, are placed in the Administrative Record or at the site repository located near the site (*e.g.*, local library). Other activities, including a public availability session, public meetings, issuance of fact sheets about the site, and the release of an amended proposed plan, may allow the surrounding community and other interested parties an opportunity to learn more about the site and present their opinions on remedial activities.

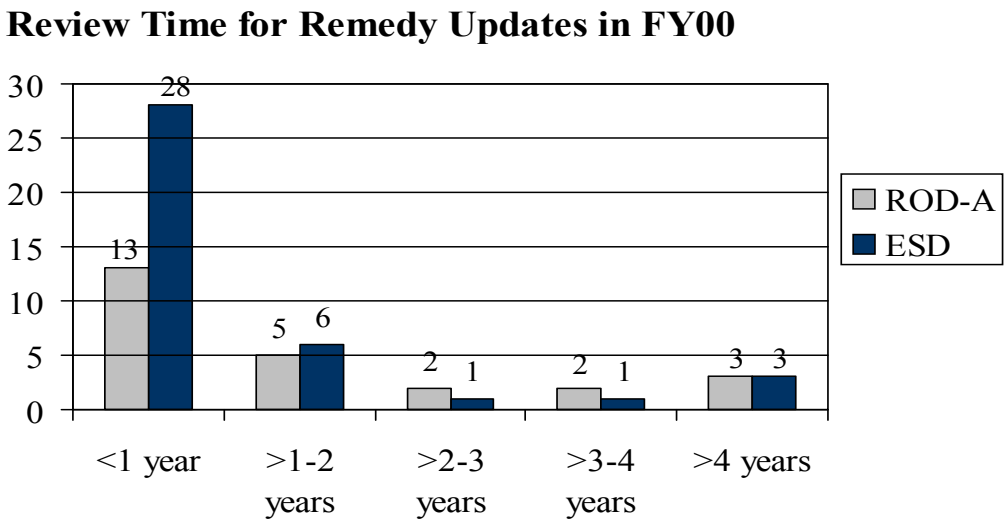
Refer to the individual site summaries in Appendices A.1 and A.2 for specific activities related to State participation and community involvement that were part of the remedy update process for each update completed during FY00 and FY01. States initiated five remedy updates during FY00 and FY01. There were no Tribal-initiated updates and no community-initiated updates either. There were three public-joint updates and eleven State-joint updates.

3.3 Remedy Update Duration

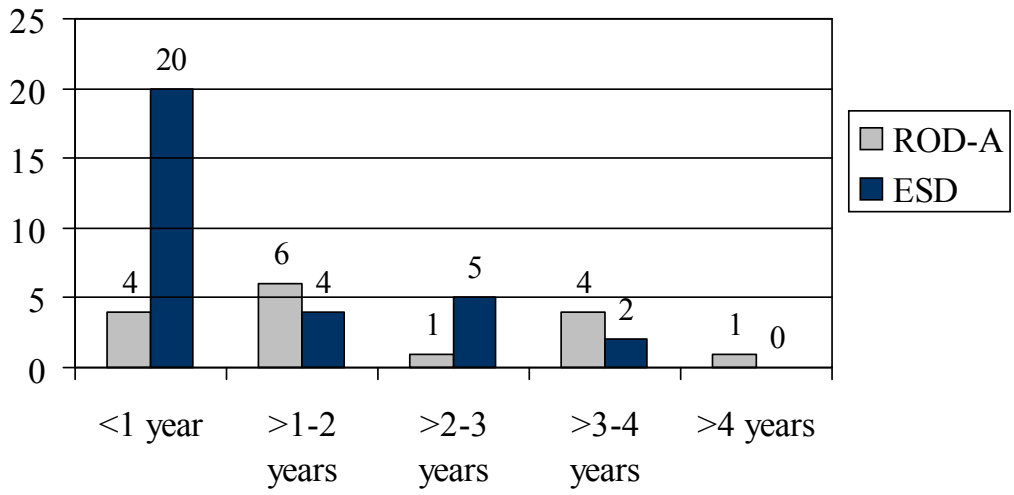
Reviewing site-specific material and completing the ESD or ROD Amendment took less than a year for a majority of the remedy updates completed during FY00 and FY01 (see *Exhibit 2.4*). Of note, there is a slight increase in the number of remedy updates with extended review periods. An examination of sites with longer review periods suggests that the review durations were influenced by:

- A lengthy, but important public involvement phase;
- An extensive verification/pilot test period following the discovery of new performance, technical, or toxicological data;

Exhibit 2.4:
Approximate Review Time for Remedy Updates in FY00 and FY01



Based on 64 updates



Based on 47 updates

- The discovery of unexpected contamination late in the remedy design phase; or
- A redefinition of land use.

Section 4.2 provides specific examples of remedy changes whose reviews lasted more than one year.

4.0 Lessons Learned

During the last two years of reform implementation, EPA has gained insight into ways of successfully updating site remedies. The following sections detail information collected regarding reform benefits, site examples, and comments from stakeholders.

4.1 Benefits

This Reform has been very successful in bringing past decisions in line with current science and technology. By doing so, these updates improve the cost effectiveness of site remediation while ensuring reliable short- and long-term protection of human health and the environment. The quantifiable results of this Reform have been announced in EPA's testimony before Congress, described in private industry evaluations of Superfund reforms, and included in a report by the U.S. General Accounting Office. Of additional note is EPA's overwhelmingly positive record of responding to remedy update requests made by outside parties.

4.2 Site Examples

In many cases, remedies were updated as a result of a decrease or increase in contaminant volume or an inability to achieve desired results in a test of the ROD-selected treatment or contaminant technology during the remedial design phase of the cleanup. Although all updates described in Appendix A represent site-specific situations, it is possible to use some as examples of typical remedy update situations that occurred during FY00 and FY01.

Updates Based on New Technology

Some updates were the result of new technology that was not considered at the time of the original remedy. For instance, the results of a pilot test to characterize the extent of contamination lead to a change in the remedy at the **Keystone Sanitation Landfill in Pennsylvania**. The original remedy, which included excavation and capping of the contaminated area and site access restrictions, was replaced with a new gas extraction method used in conjunction with upgrades to the existing soil cover, monitoring, and institutional controls. Consequently, the contaminated soil and landfill waste cleanup has proceeded with estimated savings of $3.6 million.

Similarly, the results of a treatability study conducted during the Remedial Design supported a remedy update at the **New Hanover County Airport Burn Pit in North Carolina**. A traditional ground water pump and treatment system was replaced with air sparging as an innovative technology, with resultant estimated savings of $2,000.

New technology paved the way for a change in the remedy at the **Odessa Chromium site in Texas**. Nearly $1 million in estimated savings were achieved with remedy updates on two operable units where a ground water pump and treat system was replaced by an innovative technology known as in-situ ferrous sulfate treatment.

Updates Based on New Performance Data

New performance data can also provide the needed basis for updating remedies. At the **Vineland Chemical Co., Inc. in New Jersey**, the changes documented in the ESD were based on new information received subsequent to the issuance of the ROD. Performance studies indicated that, by following the remedy outlined in the proposed plan, cleanup level for arsenic would not be attained in the contaminated soils. The original remedy of in-place soil flushing was replaced by excavation and soil washing in a soil washing treatment plant with clean soil re-deposited on-site. Over $14 million in estimated savings resulted from this remedy.

Coordinating the Update

Some remedy updates involve coordination among EPA, other Federal agencies, and State and local government agencies. For example, at the **Idaho National Engineering Lab (INEEL) U.S. Department of Energy (DOE) facility**, EPA coordinated the remedy update with the State and DOE as a Federal facility. The original remedy involved a ground water pump and treat system for all zones of a contaminated plume. However, post-ROD treatability studies demonstrated that the cleanup could be conducted in less time and at a lower cost. The remedy update consisted of cleanup of a "hot spot" area at INEEL in conjunction with a pump and treatment system for part of the contaminated plume and monitored natural attenuation, with resultant estimated savings of $1 million.

State Input in the Update

States can be either the lead or support agency for a remedy update. The remedy update was State-lead at the **Duell and Gardner Landfill in Michigan**. The results from a post-remedy investigation demonstrated that the extent of contamination in the soil and ground water was less than expected, and the size of ground water plumes either stabilized or decreased since the Remedial Investigation. Moreover, the State revised its cleanup standards which reduced the amount of soil that required excavation and disposal. By replacing the low temperature thermal desorption required in the original remedy with long-term monitoring, use restrictions or institutional controls, and landfill capping, in accordance with new State standards, estimated savings of $3.4 million resulted.

Community Preference

Community preference can have a significant impact in addressing site contamination. For example, EPA participated in numerous community meetings at the **Rowe Industries site in New York** in an attempt to implement the original remedy. Strong and sustained community opposition to discharging all treated water directly into the surface water lead to a remedy update whereby the discharge was split between the surface water and recharge basin. This change in the remedy meant that the discharged surface water would only replace the ground water that would normally seep into the surface water if the plume was not being pumped, and resulted in undisclosed cost savings.

Another example of the effect of community involvement on remedy updates, occurred at the **Monroe Auto Equipment Co. in Arkansas**. The public was supportive of a remedy update which changed on-site containment of soils and sludges to treatment and off-site disposal because it provided greater reuse possibilities for the site. The revised remedy was as protective as the original remedy, and also resulted in undetermined cost savings.

Cost Increases

While the Reform Guidance is aimed at controlling all site costs, there are remedy updates that result in cost increases. At the **Denver Radium Shattuck Chemical site in Colorado**, the original remedy was replaced after a Five-Year Review yielded additional data on contaminated soils. Although this remedy update resulted in an estimated cost increase of $35 million, the process incorporated facilitated meetings with State and local officials as well as community members. As a result, remedy alternatives were selected to allow for restricted use of the site following cleanup.

Similarly, at the **San Gabriel Valley site in California**, a remedy update became necessary when data revealed that concentrations of contaminants in ground water increased to unacceptable levels. The original passive remedy of monitoring only was replaced by a more active remedy for ground water containment using a pump and treat system. An estimated cost increase of $24 million resulted, with the State sharing the cost.

Timeframe for Completing Remedy Updates

The time needed to complete an update varies with each site. In some instances, exploring other remedies takes years of review and completion. For example, at the **McKin Co. site in Maine**, a technical evaluation documented that cleanup under the original remedy within a reasonable time frame was not possible. The remedy update to achieve ground water restoration involved the use of institutional controls, long-term monitoring, and contingencies in the event that certain monitoring criteria are exceeded. Undetermined cost savings resulted from the change in remedy.

In contrast, a review for the remedy update at **Colesville Municipal Landfill site in New York** took roughly six months to complete. The results of field tests, sampling, and a treatability study lead to an enhanced remedy with resultant estimated savings of $10 million. Moreover, the potentially responsible party at the site considered remedy alternatives with complete State involvement.

5.0 Conclusion

EPA and outside parties continued to consider *Updating Remedy Decisions* a successful Reform in both FY00 and FY01. The number of remedies updated by each Region during FY00 and FY01 clearly shows that all ten EPA Regions are implementing this Reform, with half of the Regions reporting estimated cost savings above $50 million for the two fiscal years combined. All ten EPA Regions continue to evaluate requests to review early Fund-lead remedies, as well as consider updates to more recent remedies that may not be up-to-date with current science or technology. Regions also continue to encourage outside parties to submit remedy update requests to EPA when new technical information exists to support them. Typically, EPA and outside parties share the benefits of both cost and time savings as a consequence of implementing the updated remedy.

Interested parties should review the existing Reform Guidance (OSWER Directive 9200.2-22) for basic information concerning the Reform. Additional guidance on remedy updates is included in the updated Record of Decision Guidance (see *"A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents,"* OSWER Directive 9200.1-23P, July 1999). Specific questions on implementation of the Reform may be directed to Matt Charsky of the Office of Emergency and Remedial Response by telephone at (703) 603-8777, e-mail at **charsky.matthew@epamail.epa.gov**, or FAX at (703) 603-9133. Each Region also has a remedy update contact who can be reached by contacting the Superfund Program office in any of EPA's ten Regional offices.

Acknowledgments

This report was made possible by the dedicated efforts of numerous EPA Superfund staff. Regional remedial project managers (RPMs) responsible for considering and implementing remedy updates at Superfund sites are to be commended for making these changes to select the best technologies available at Superfund sites nationwide.

This report was prepared for EPA under contract #68-W7-0051.

Appendix A:

Summary of Update Remedy Decisions for FY00 and FY01

Note: The information and data presented in Appendix A have been supplied to EPA headquarters by Regional offices. The data is subject to occasional updates as new information is received, thus Appendex A data should be used for informational purposes only.

SUMMARY OF UPDATED REMEDY DECISIONS FOR FY00

Region	# With No Sav.	# of TBD	# With Est. Sav.	# With Est. Incr.	Estimated Savings	Estimated Increases	Change Initiator						Type of Change	
							PRP	EPA	State	Fed. Fac.	Public	Joint	ESD	ROD-A
1	3	0	0	1	0	$0.5M	1	3	0	0	0	0	4	0
2	1	0	2	0	$23.0M	0	3	0	0	0	0	0	2	1
3	2	0	7	1	$32.1M	$0.9M	8	1	1	0	0	0	5	5
4	3	0	7	1	$0.5M	$0.1M	4	5	0	1	0	1	5	6
5	1	1	7	0	$35.9M	0	2	2	0	2	0	3	4	5
6	0	0	3	0	$2.5M	0	1	0	2	0	0	0	2	1
7	2	0	1	1	$0.6M	$0.6M	1	2	1	0	0	0	3	1
8	0	0	3	1	$4.7M	$35.0M	0	0	0	2	0	2	2	2
9	1	1	3	1	$2.3M	$24.0M	0	3	0	3	0	0	4	2
10	1	1	4	4	$83.4M	$26.6M	1	2	0	2	0	5	8	2
Total	**14**	**3**	**37**	**10**	**$185.0M**	**$87.7M**	**21**	**18**	**4**	**10**	**0**	**11**	**39**	**25**

14 3 37 10
64 sites

21 PRP 18 EPA 11 JOINT
10 FED FAC 4 STATE
64 sites

39 ESD
25 ROD-A
64 sites

SUMMARY OF UPDATED REMEDY DECISIONS FOR FY01

Region	# With No Sav.	# of TBD	# With Est. Sav.	# With Est. Incr.	Estimated Savings	Estimated Increases	Change Initiator						Type of Change	
							PRP	EPA	State	Fed. Fac.	Public	Joint	ESD	ROD-A
1	3	3	1	2	$1.0M	$0.9M	2	2	0	5	0	0	8	1
2	0	3	0	0	$14.2M	0	0	2	0	0	0	1	3	0
3	1	1	6	0	$18.2M	0	6	1	0	1	0	0	5	3
4	1	0	1	1	$1.4M	$4.5M	0	2	0	1	0	0	1	2
5	3	3	5	1	$9.2M	$0.1M	7	4	1	0	0	0	8	4
6	1	0	1	0	$21.0M	0	1	1	0	0	0	0	0	2
7	0	0	1	1	$ 11.0M	$4.0M	0	1	0	1	0	0	0	2
8	0	0	1	0	$2.6M	0	0	0	0	1	0	0	1	0
9	0	0	1	1	$0.3M	$3.0M	1	0	0	0	0	1	2	0
10	1	1	3	0	$5.2M	0	1	3	0	0	0	1	3	2
Total	**10**	**11**	**20**	**6**	**$84.1M**	**$12.5M**	**18**	**16**	**1**	**9**	**0**	**3**	**31**	**16**

10 11 20 6
47 sites

18 PRP 16 EPA 9 FED FAC
3 JOINT 1 STATE
47 sites

31 ESD
16 ROD-A
47 sites

Appendix A.1:

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Note: The information and data presented in Appendix A.1 represent only a portion of the information available in the decision document. If more information is needed, please refer to the site's ESD, ROD-Amendment, memo-to-file, or letter.

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 1 - FY 00						
Region 1 Iron Horse Park OU2 - Shaffer Landfill, MA	6/27/91 9/8/00 (ESD)	7/00 9/8/00	PRP	Ground water (leachate)	State concurrence letter, public meeting	Fed = Unknown Contr. = Unknown Est'd Savings = $0
	Type of Change: From - Collecting leachate via perimeter toe drains; To - Collecting leachate via dual band collection (leachate and gas) wells in landfill.					
	Factual Basis: Collection of leachate from the leachate mound should result in collection, treatment and disposal of much greater volume of leachate than would be realized from the perimeter toe drains.					
Region 1 U.S. Naval Construction Battalion Center Davisville, RI	9/30/99 1/5/00 (ESD)	12/29/99 1/5/00	EPA	Soil, Ground water	EPA, State concurred; community notified; public notice in newspaper	Fed = $2K EPA = $200 Est'd Savings = $0
	Type of Change: There is a need for a time extension of two months.					
	Factual Basis: The Navy's contractor was unable to provide a Class 1 survey for the area of institutional controls, in the time period required by the ROD.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 1 Sullivans Ledge Site OU1, MA	6/28/89 9/27/00 (ESD)	9/27/98 9/27/00	EPA	Wetlands, Ground water	Series of informal public meetings	Fed = None Contr. = None Est'd Savings = $0
	Type of Change: From - Concrete lining of unnamed stream adjacent to the cap over the disposal area and shallow ground water collection trench; To - Stream placed in culvert and wetlands replicated. Ground water captured with slurry wall and shallow wells.					
	Factual Basis: New site conditions during construction lead to new data and required construction changes in the field. Wetlands lost to a stream culverting were replicated downstream. The shallow collection trench at the down gradient side of the cap was supplemented with a slurry wall and 2 shallow wells.					
Region 1 - FY 01						
Region 1 Fletcher's Paint Works and Storage Facility, OU1, NH	9/30/98 3/14/01 (ESD)	1/01 3/14/01	PRP	Soil	State concurrence letter, community notified	Fed = 160 hrs. Contr. = None Est'd Savings = $0
	Type of Change: From - Excavation and use of thermal desorption treatment; To - Addition of language to the the cleanup criteria allowing consideration for the cleanup of arsenic to the background concentration, if the background concentration, is higher than the cleanup level set in the ROD; and the consideration for the practical quantitation limit for benozo(a)pyrene over the ROD cleanup level.					
	Factual Basis: PRP identified the "missing" ROD language allowing for consideration of background concentrations and practical quantitation limits in establishing final cleanup criteria for the site.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 1 Loring Air Force Base, OU4, ME (U.S. Air Force)	9/30/96 OU4 1/26/01 (ESD)	Unknown 1/26/01	U.S. Air Force	Landfill ground water	State concurred on ESD. Restoration Advisory Board Consulted on draft ESD.	Fed = Insignificant costs incurred (EPA) Contr. = Insignificant costs incurred (US Air Force) Est'd Savings = $0
	Type of Change: From - Minimal action (monitoring) in conjunction with source control remedy (RCRA C covers); To - Revised ground water compliance and ground water restriction boundaries to expand the off-base parcel for which the U.S. Air Force obtained an easement/institutional control (e.g., no ground water extraction).					
	Factual Basis: Detection of ground water contaminants associated with the landfills on the off-base boundary resulted in the remedy update.					
Region 1 Loring Air Force Base, OU12, ME (U.S. Air Force)	9/19/99 OU12 1/26/01 (ESD)	Unknown 1/26/01	U.S. Air Force	Ground water	State concurred on ESD. Restoration Advisory Board Consulted on draft ESD.	Fed = Insignificant costs incurred (EPA) Contr. = Insignificant costs incurred (US Air Force) Est'd Savings = $0
	Type of Change: From - Limited action ground water management zone alternative, institutional controls, provisional water supply and long term monitoring; To - Extend the ground water management zone for which the U.S. Air Force obtained an easement associated with an institutional control for the off-base parcel west of the Quarry.					
	Factual Basis: Contamination associated with the Quarry was detected off-base and beyond the originally defined ground water management zone.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 1 Materials Technology Laboratory (U.S. Army), OU1, MA	9/26/96 6/7/01 (ESD)	Unknown 6/01	Army	Soils	State concurred on ESD. Restoration Advisory Board given opportunity to review and comment on draft ESD.	Fed = $500* (EPA) Contr. = N/A Est'd Savings = $1.0-$1.5M
	Type of Change: From - Soil excavation and off-site disposal; To - Natural Attenuation					
	Factual Basis: Natural Attenuation *Note: This was the second ESD for the site, although the issue in this ESD was the same as the earlier (1998) ESD. Therefore, the resources from EPA for document review, etc. were low.					
Region 1 McKin Co., ME	7/22/85 3/30/01 (ROD-A)	5/97 3/30/01	EPA	Ground water	Mediated discussions included EPA, State, PRPs, the town, the local water district and community members.	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown
	Type of Change: From - Ground water restoration to technical impracticability waiver for federal and state drinking water ARARs; To - Institutional controls, long term monitoring, contingencies for future action should certain monitoring criteria be exceeded.					
	Factual Basis: EPA's technical impracticability evaluation documented that aquifer restoration within a reasonable time frame was not technically feasible.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 1 New Bedford Harbor OU1, MA	9/25/98 9/27/01 (ESD)	9/6/01 9/27/01	EPA	Sediments	State concurred	Fed = 3 wks. Contr. = None Est'd Savings = $0
	Type of Change: From - Design and construction of Confined Disposal Facilitation (CDFs) and associated water treatment facilities, dredging sediments and place in CDF, interim capping; To - Added five elements to the 200 acre sediment cleanup; mechanical dewatering; additional shoreline stabilization; use of the pilot study CDF; change in the CDF D wall design; and use of a rail line at CDF.					
	Factual Basis: Additional site information (e.g., field surveys, sediment sampling and state-of-the-art dredging field test) and refined the cleanup approach for the upper and lower harbor area.					
Region 1 Union Chemical Co., Inc., ME	12/27/90 9/28/01 (ESD)	10/97 9/28/01	PRPs	Ground water	Monthly meetings with the local citizens group, the state and the PRPs.	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown
	Type of Change: From - Extracted ground water being treated using ultraviolet/oxidation and treated ground water being discharged to surface water; To - In-situ use of chemical reductants and reinjection into the ground water.					
	Factual Basis: The results of a pilot test indicated that ground water could be treated without first requiring extraction and disposal in surface water.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 2 - FY 00						
Region 2 Byron Drum and Barrel, NY	9/29/89 8/2/00 (ESD)	3/99 7/00	PRP	Ground water, Soil	Full State involvement; community expressed some interest and expressed support for the changes at an 8/24/00 public meeting.	Fed = 100 hrs. Contr. = None Est'd Savings = $0
	Type of Change: From - The ROD called for extraction and treatment of the contaminated ground water in two areas of the site, recharge of the treated ground water to the soil to enhance the flushing of the contamination in the soil into the ground water (i.e., in-situ soil flushing), and further evaluation of the concentrations of inorganic constituents in the surface soil in a third area of the site to determine if levels of concern are present; To - Based on pre-remedial design (RD) sampling, it was concluded that further action in these two areas is not warranted. The contamination in the remaining area of the site, however, still requires remediation. To enhance the remediation of the contaminated soil in this area, instead of discharging the treated water to a recharge basin, as was originally planned. An infiltration gallery consisting of perforated pipe and gravel, will be installed after the excavation of several feet of contaminated soil. The excavated soil will be transported off-site for treatment/disposal.					
	Factual Basis: Data collected during pre-RD sampling revealed that the contaminant concentrations in the ground water in one of the two areas of the site noted above are only marginally above the cleanup levels specified in the ROD and that the levels of inorganic contaminants in the surface soil in the third area of the site noted above is consistent with background concentrations.					
Region 2 Colesville Municipal Landfill, NY	3/29/91 9/7/00 (ESD)	2/00 8/00	PRP	Ground water	Full State involvement; community expressed no opinion.	Fed = 100 hrs. Contr. = None Est'd Savings = $10M
	Type of Change: From - Pump and treatment; To - Pump and treatment with enhanced reductive dechlorination.					
	Factual Basis: Field tests, post-capping, ground water sampling, and a pilot-scale treatability study.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 2 Myers Property, NJ	9/28/99 7/6/00 (ROD-A)	1996 7/6/00	PRP	Soil	State worked with EPA as support/advisory agency; local neighborhood group has been involved for several years.	Fed =1000 hrs.* Contr. = None Est'd Savings = $13M
	Type of Change: From - On-site treatment using soil washing and backfill and replacement with new soil; To - Off-site disposal in secure landfill and replace with new soil.					
	Factual Basis: Treatability studies in the mid-1990's showed that original remedy using soil washing would not work. *Note: EPA used extensive resources to oversee multiple PRP treatability studies and several rounds of work plans and revisions. There were also regular meetings with the PRP, community and state to discuss the planned remedy update					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 2 - FY 01						
Region 2 Kin-Buc Landfill, NJ	9/28/92 8/16/01 (ESD)	6/3/97 5/2/01	EPA	Landfill refuse/drums	State concurred with the ESD. EPA held a number of meetings with the Town Council about this work, and found general acceptance of EPA's planned remedy change. A local environmental group has expressed strong reservations about the actions taken not being "enough."	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown*
	Type of Change: From - The original ROD identified the contents of the "Mound B" portion of the site as household refuse and industrial debris, and required maintenance of a clay cap. A limited number of drums were subsequently discovered; To - The ESD concluded that the Mound B remedy was still adequate, but added removal of drums to the extent practicable. The drum removal work took place earlier in 2001.					
	Factual Basis: EPA performed several investigations to determine the extent of the drums in Mound B, and collected samples of the drums, the other refuse, and the ground water. *Note: The PRP has not shared its response costs with EPA.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 2 Rowe Industries Ground Water Contamination, NY	9/30/92 7/97 (ESD) 5/3/01 (ESD)	3/01 5/01	EPA, Public	Ground water	EPA attended numerous community meetings trying to implement construction of the original remedy, but the community was adamantly opposed to a treated water discharge to surface water.	Fed = 10 public mtgs. (EPA) Contr. = 10 public mtgs. Est'd Savings = Unknown*
	Type of Change: From - Treated water being discharged to the surface water; To - Splitting the discharge between the surface water and the recharge basin. That way, the discharged surface water only replaces the ground water that normally would seep into the surface water if the plume was not being pumped as an attempt to balance the water discharge.					
	Factual Basis: In response to public concern about potential impacts resulting from discharging ground water, the remedy was updated. *Note: The PRP will implement the remedy update so EPA does not have the cost details.					
Region 2 Vineland Chemical, Co., Inc., NJ	9/28/89 9/10/01 (ESD)	1999 9/01	EPA	Soil	State concurred with the ESD. No significant public opposition to the ESD.	Fed = 40 hrs. Contr. = None Est'd Savings = $14.2M
	Type of Change: From - In-place soil flushing (flush into the shallow aquifer where contamination was to be collected by a pump and treat plant); To: Excavation and soil washing in soil washing treatment plant and redeposition of clean soil on-site.					
	Factual Basis: The pump and treat studies indicated that the unsaturated zone soils would not all reach the cleanup level for arsenic and resulted in the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 - FY 00						
Region 3 Aladdin Plating Site OU2, PA	12/30/93 1/21/00 (ESD)	12/99 1/21/01	EPA	Ground water	The state concurred with remedy change. Required changes to Administrative Record made in accordance with 40 CFR.	Fed = 50 hrs. Contr. = None Est'd Savings = $0
	Type of Change: The original remedy, which provided for sampling, will be done by removal instead of the remedial process.					
	Factual Basis: Sampling should have been a removal action under CERCLA section 101(23).					
Region 3 Avco Lycoming Williamsport Division, PA	6/30/91 4/9/92 (ESD) 12/30/96 (ROD-A) 4/6/00 (ROD-A)	5/98 4/6/00	PRP	Ground water	State provided support throughout the evaluation and concurred on amendment. Public meeting and comment period. Comments addressed in Responsiveness Summary.	Fed = 150 hrs. Contr. = None Est'd Savings = $1.9M
	Type of Change: From - Extraction with air sparging/soil vapor extraction (SVE) and metal precipitation systems to address organic; installation of a molasses injection system to address hexavalent chromium; To - Ground water recovery system to capture volatile organic compounds; source reduction through either air sparging/SVE; ground water extraction and/or in-situ oxidation; and recognize existing down gradient extraction system. Continue in-situ metals precipitation and monitoring.					
	Factual Basis: Supplemental data gathered after installation of air sparging and SVE was found to be ineffective, due to subsurface geologic conditions.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Brown's Battery Breaking, PA	OU#1 - 9/28/90 OU#2 - 7/2/92 5/31/00 (ROD-A)	1/95 5/00	PRP	Soil	State approval: 5/23/00 Public meeting and comment period April/May 2000	Fed = 150 hrs. Contr. = None Est'd Savings = $2.6M
	Type of Change: From - Additional soil excavation in Appendix G areas to a cleanup level of 200 ppm; planned excavation sequence, prior to the issuance of Appendix G; solidification/stabilization of all materials excavated from the site prior to off-site disposal; separation of incidental lead posts and plates from casings prior to treatment; permanent relocation of on-site residents and business and implementation of deed restrictions to limit future use; To - Limit excavation in Appendix G areas where sampling confirms removal of lead up to 200 ppm; reevaluate the sequence of excavating Appendix G soils and other soils exceeding 1000 ppm cleanup standard. Allow testing of marginally contaminated soils to determine if treatment is needed; change potential future use of property.					
	Factual Basis: Federal trustees identified additional soil excavation areas. Test pitting in pre-design outlined the extent of contamination.					
Region 3 Keystone Sanitation Landfill OU1, PA	9/30/90 9/14/00 (ROD-A)	11/98 9/14/00	PRP	Soil, Landfill wastes	State consulted an alternate source control remedy and concurred with amendment. Public meeting and comment period with no objections.	Fed = 150 hrs. Contr. = 0 Est'd Savings = $3.6M
	Type of Change: From - Excavation and consolidation into landfill; impermeable cap and gas collection system over landfill and subsequent revegetation; and implementing site access restrictions; To - Employ Enhanced Landfill Gas Extraction (ELGE) system to remove and destroy volatile organic compounds (VOCs) and methane from landfill waste; upgrades to existing soil cover; monitoring; and institutional controls.					
	Factual Basis: Pilot test conducted for ELGE system. New methods now available to characterize landfill permeability and gas concentration.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Metal Bank Site, PA	12/31/97 9/27/00 (ESD)	3/6/00 9/00	PRP	Ground water, Soil	State concurred with ESD	Fed = 75 hrs. Contr. = None Est'd Savings = $0
	Type of Change: From - Install oil collection system; install temporary cofferdams; soil monitoring. To - Excavate LNAPL in lieu of oil collection system; eliminate cofferdams; elimination of soil monitoring program and use of geotextile layer.					
	Factual Basis: Preliminary design sampling and investigation results lead to the remedy update.					
Region 3 Moyer Landfill Site, PA	9/20/85 1/3/00 (ESD)	4/26/99 12/23/99	State	Ground water, Surface water	Public Notice requirements of 40 CFR and sub parts have been met	Fed = 75 hrs. Contr. = None Est'd Savings = $2M
	Type of Change: From - On-site treatment of leachate; To - Leachate collection with treatment at an existing Publicly Owned Treatment Works, contingent on the construction of interceptor sewers.					
	Factual Basis: Results of recent flow data lead to the remedy update.					
Region 3 MW Manufacturing Site, PA	OU#3 6/30/93 9/27/00 (ESD)	11/95 7/00	PRP	Ground water	State concurred with ESD	Fed = 60 hrs. Contr. = None Est'd Savings = $20M
	Type of Change: From- Ground water extraction system for DNAPL collection; To - Construct an interceptor trench and intermittent bedrock wells for DNAPL collection. Note: Cleanup standards changed from background to MCLs, which was another motive for the remedy change.					
	Factual Basis: Pre-design investigation results including a geoprobe investigation, ground water sampling for VOCs, overburden aquifer test, natural attenuation evaluation, and additional ground water modeling.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Old City of York Landfill Site, PA	9/30/91 3/31/00 (ROD-A)	9/1/98 3/00	PRP	Ground water	State approval received in February 2000. Public informed on 9/21/99.	Fed = 250 hrs. Contr. = None Est'd Savings = $0.5M
	Type of Change: From - Operate a ground water recovery/treatment system in both refuse Areas 1 and 3 and install additional extraction wells in these areas, if needed; To - Monitored natural attenuation with institutional controls in both refuse Areas 1and 3.					
	Factual Basis: Results of a ground water extraction and treatment system lead to the remedy update.					
Region 3 Whitmoyer Laboratories Site (OU3), PA	12/31/90 9/30/99 (ROD-A) 8/24/00 (ROD-A)	3/8/00 6/22/00	PRP	Soil	State concurred with Amendment #2 for OU #3 on 7/21/00. Thirty-day public comment period (6/22/00-7/22/00), in addition to a public meeting held on 6/26/00.	Fed = 175 hrs. Contr. = None Est'd Savings = $1.5M
	Type of Change: From - Excavate moderately contaminated unsaturated off-site soil; cover on-site soil with impermeable cover; off-site disposal of nonhazardous concrete and building debris; and excavate and dispose of underground piping and building foundations. To - Leave moderately contaminated unsaturated soils in place, off-site, and cover with two feet of clean soil; eliminate soil excavation activities in the southeastern off-site area along the steep embankment adjacent to rail tracks; allow for non-hazardous concrete and building debris to be used as fill on-site, underneath soil cover; and allow nonhazardous building foundations and nonhazardous piping to be left on-site, provided that they are located below the two foot cover of clean soil. Deed restrictions necessary for off-site areas where contaminated unsaturated soil remains in place.					
	Factual Basis: Final soil/sediments delineation program results report resulted in the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 - FY 01						
Region 3 Arrowhead Associates/ Scovill Corporation, VA	9/29/91 (ROD) 9/98 (ESD) 9/28/01 (ROD-A)	10/00 9/28/01	PRP	Ground water	State approved on 9/28/01	Fed = 150 hrs. Contr. = 0 hrs. Est'd Savings = $2.0M
	Type of Change: From - Ground water pump and treat system. The ESD in 1998 changed the remedy to a Permeable Reactive Subsurface Barrier (PRSB); To - The ROD Amendment provides for continuing with the PRSB and allows for the installation of an impermeable Surface Cap which is estimated to produce a more efficient and more cost- effective remedy than either the pump and treat technology or the PRSB operating alone.					
	Factual Basis: Continuing evaluations of the PRSB system by the PRPs indicated that an impermeable surface cap would improve performance of the PRSB unit.					
Region 3 Berks Sand Pit, PA	9/29/88 2/2/94 (ESD) 9/14/01 (ESD)	3/01 7/13/01	EPA	Ground water	State Letter of Approval on 7/13/01	Fed = 50 hrs. Contr. = 0 hrs. Est'd Savings = $0
	Type of Change: From - Local restrictions to prevent any further drinking water wells in the contaminated areas of the aquifer; To - Remove local restrictions from preventing any further drinking water wells in the contaminated area. Operating ground water pump and treat system has lowered the contamination of the ground water to allow lifting the prohibition against new drinking water wells. Monitoring and public outreach to continue.					
	Factual Basis: The remedy was working well enough to rescind the institutional control.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Centre County Kepone Site (OU1), PA	4/21/95 3/8/01 (ROD-A)	4/16/97 3/2/01	PRP	Sub-surface soil	State approved on 3/2/01	Fed = 150 hrs. Contr. = 0 hrs. Est'd Savings = $2.4M
	Type of Change: From - Excavation of sub-surface VOC, mirex and kepone contaminated soils and off-site disposal; To - Soil Vapor Extraction (SVE) of VOCs in soil. Excavation will still occur where mirex and kepone exceed clean-up criteria and where bedrock is near the ground surface (less than 6 feet). Other components of the ROD remain the same.					
	Factual Basis: Soil vapor extraction technology will achieve cleanup goals and is less expensive than the excavation of VOC contaminated sub-surface soils.					
Region 3 E.I. DuPont Newport Site (South Landfill only), DE	8/26/93 8/16/95 (ESD) 5/18/01 (ESD)	11/99 5/16/01	PRP	Soil, Ground water	State approved on 5/16/01	Fed = 250 hrs. Contr. = 0 hrs. Est'd Savings = $9.3M
	Type of Change: From - In-situ chemical precipitation with sodium sulfide and sodium sulfate; upgrade containment system from a soil cover to a low-permeability synthetic cap; install circumscribing ground water barrier wall and a ground water pump and treat system; To - Installation of a Permeable Reactive Barrier System (PRBS) to remove metals from ground water; construction of a low-permeability synthetic cap; and elimination of ground water pump and treat system.					
	Factual Basis: The PRBS is designed to remove the contamination from the ground water while it is still in the ground. Treatment takes place in the permeable zone, eliminating the need for a pump and treat system. Both EPA and the State of Delaware concurred with the change in treatment technology.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Hunterstown Road Site, PA	8/2/93 8/25/98 (ESD) 3/22/01 (ESD)	8/23/00 3/8/01	PRP	Lagoon sediments and drum removal	State Letter of Approval on 3/8/01	Fed = 75 hrs. Contr. = 0 hrs. Est'd Savings = $75K
	Type of Change: From - Off-site stabilization treatment of lagoon sediments, stressed vegetation and corridor areas and disposal; To - On-site stabilization treatment of lagoon sediments, stressed vegetation and corridor areas. Eighty drums were discovered during on-site treatment. Drums were removed and contents treated and destroyed. Original cost savings from on-site treatment were estimated to be $100,000. Costs of drum removal and disposal lowered estimated cost savings.					
	Factual Basis: The PRP wanted a cheaper remedy.					
Region 3 Jack's Creek Superfund Site, PA	9/30/97 4/19/01 (ESD)	4/00 3/29/01	PRP	Soil, Debris	State approval on 3/29/01	Fed = 75 hrs. Contr. = 0 hrs. Est'd Savings = $2.2M
	Type of Change: From - Excavation of on-site threat (metal contaminated) materials, transport off-site, off-site stabilization and off-site disposal; To - Excavation of on-site threat (metal-contaminated) materials, on-site stabilization and placement of stabilized materials beneath the on-site multi-layer cap. Both the PRP Group (for reasons of decreased costs) and community members (for reasons of least disturbance) prefer on-site treatment. Off-site treatment would require the need to truck some 750 loads of contaminated soil through the community to the disposal site.					
	Factual Basis: On-site stabilization and placement of stabilized materials beneath the cap satisfies the needs of both the PRP and the community. With certain conditions, the State concurred with the remedy.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Metal Banks Site, PA	12/21/97 9/27/00 (ESD) 12/15/00 (ESD)	3/00 11/00	PRP	Soil, Ground water	State approved in 11/00	Fed = 75 hrs. Contr. = None Est'd Savings = $0*
	Type of Change: From - Soil hot spots of PCB contamination exceeding 25 ppm will be excavated and confirmation sampling done at the conclusion of the excavation; Oil Collection and Monitoring System installed along site perimeter to collect oil floating on shallow ground water and off-site disposal; install sheet pile wall around southern and western perimeter of property to prevent erosion of fill material into DE River; To - Sampling PCB hot spots either prior to or after excavation of soils to allow for a more focused remedy; and installment of Oil Monitoring and Collection System only in area SA 4/5 (which leaves out SA 1, 2, and 3). Installment of Oil Monitoring System only in the other areas. Collecting of oil floating in shallow ground water for off-site disposal. Sheet Wall reduced in size to cover surface water area only and additional erosion control measures were required such as revegetation, geotextile covers and supplemental rip rap along the DE river where signs of bank erosion are detected.					
	Factual Basis: The new, more focused remedy should result in a cheaper cleanup with the same results. *Note: The remedy changes will clearly result in cost savings. Due to the on-going litigation between the site owners and the PRPs related to remedy issues, obtaining realistic estimates of future costs from any of the parties would be impractical now. When the court resolves the issues, obtaining cost estimates should be feasible.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 3 Patuxent River Naval Air Station, MD	12/22/98 6/25/01 (ROD-A)	2/2/99 4/00	Navy	Soil	U.S. EPA Region 3 approval: 6/25/01	Fed = 150 hrs. Contr. = 0 hrs. Est'd Savings = $2.2M
	Type of Change: From - Excavation of contaminated soil, off-site incineration and disposal in off-site RCRA approved Landfill; To - Excavation of smaller portion of soil hot spots, addition of soil cover and application of clean fill, and off-site disposal of soils. No off-site incineration will be employed.					
	Factual Basis: The Navy believes that more focused, less expensive remedy will achieve the cleanup goals. The Maryland Department of the Environment concurred that the ROD Amendment is protective of human health and the environment.					
Region 4 - FY 00						
Region 4 Camp LeJeune Military Res. (US Navy), NC	5/15/97 6/20/00 (ROD-A)	3/1/98 6/20/00	Navy	Subsurface soils	State concurred on amendment. Public notice of Proposed Plan, during public comment period from 9/1/98 to 10/1/98.	Fed = Unknown Contr. = Unknown Est'd Savings = $200K
	Type of Change: From - On-site biological treatment of soil contaminated with PAH compounds; To - On-site landfill					
	Factual Basis: Results of a treatability study found that biological treatment would not treat all of the PAH compounds.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 Davis Park Road TCE, NC	9/29/98 9/27/00 (ESD)	9/15/00 9/27/00	EPA	Ground water	The State concurred with the ESD. The ESD was publicized by a notice in the local newspaper.	Fed = Unknown Contr. = None Est'd Savings = $0
	Type of Change: From - Providing water service to 70 families and conducting long term monitoring of natural attenuation with traditional ground water pump and treatment as a contingent remedy; To - Providing water service to 70 families and conducting long term ground water monitoring of natural attenuation with no contingent remedy.					
	Factual Basis: Ground water monitoring results showed that natural attenuation was occurring in the ground water at the site.					
Region 4 General Electric Co./ Shepherd Farm, NC	9/29/95 7/27/00 (ESD)	12/1/99 7/27/00	EPA	Ground water	The State concurred with the ESD. The ESD was publicized by a notice in the local paper.	Fed = Unknown Contr. = None Est'd Savings = Small cost reduction
	Type of Change: From - Ground water pump and treatment with in-situ biological remediation. To - Ground water pump and treatment with no biological treatment.					
	Factual Basis: The results of a treatability study, conducted during the Remedial Design, determined that in-situ biological treatment would not be effective in remediating the site.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 JFD Electronics/Channel Master, NC	9/10/92 7/19/00 (ESD)	6/10/00 7/19/00	EPA, PRP	Soil, Sludge	The State concurred on the ESD. The ESD was publicized by a notice in the local newspaper and there was a public meeting on 6/12/00.	Fed = Unknown Contr. = None Est'd Savings = $150K
	Type of Change: From - The remedy called for excavation and mix of on-site and off-site disposal options based on waste type; metal contaminated wastes were to be solidified and disposed on-site; and other wastes were to be transported off-site for disposal; To - All wastes will be excavated and transported off-site for disposal.					
	Factual Basis: Oil sampling for hexavalent chromium, conducted after the ROD was issued, determined that the area and extent of soil contamination at the site was significantly less than previously determined during the Remedial Investigation. The community supported off-site disposal of all wastes.					
Region 4 New Hanover County Airport Burn Pit, NC	9/29/92 4/11/00 (ROD-A)	10/1/99 4/11/00	PRP	Ground water	The State concurred on the amended ROD. The Proposed Plan public comment period was 11/16/99 to 1/15/00.	Fed = Unknown Contr. = None Est'd Savings = $2K
	Type of Change: From - Traditional ground water pump and treatment; To - Air sparging as an innovative treatment technology.					
	Factual Basis: The results of a treatability study conducted during the Remedial Design supported the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 North Belmont PCE, NC	9/24/97 8/24/00 (ESD)	1/5/00 8/24/00	EPA	Ground water	The State concurred on the ESD. The ESD was publicized by a notice in the local newspaper and a fact sheet was sent out to the site mailing list.	Fed = Unknown Contr. = None Est'd Savings: $100K
	Type of Change: From - In well vapor stripping technology and in-situ biological remediation; To - Deleting the in-situ biological remediation and using only the in well vapor stripping technology.					
	Factual Basis: Results of a treatability study conducted during the Remedial Design lead to the remedy update.					
Region 4 Para - Chem Southern, Inc., SC	9/27/93 12/23/99 (ROD-A)	10/1/99 12/23/99	PRP	Soil	The State concurred on the amended ROD. The Proposed Plan public comment period was 8/26/99 to 9/25/99.	Fed = Unknown Contr. = None Est'd Savings = $81K
	Type of Change: From - Soil excavation and off-site disposal of all contaminated soils on site; To - Changed remedy to require soil vapor extraction in one area of site in lieu of soil excavation and off-site disposal.					
	Factual Basis: The Remedial Action was 75 percent complete when the PRP identified an area of the site that could be successfully remediated using soil vapor extraction at a significant cost reduction.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 Potters Septic Tank Service Pits, NC	8/5/92 9/27/00 (ROD-A)	6/1/00 9/27/00	EPA	Ground water	The State concurred on the amended ROD. The Proposed Plan public comment period was 8/10/00 to 9/9/00	Est'd Savings = $0 Contr. = None Est'd Savings = $6K
	Type of Change: From - Ground water contamination source removal and ground water pump and treatment; To - Source removal and ground water natural attenuation with institutional controls.					
	Factual Basis: During the source removal phase of the Remedial Action, it was observed that there was a significant improvement in ground water quality at the site.					
Region 4 Redwing Carriers, Inc., (Saraland), AL	12/15/92 6/14/00 (ROD-A)	1/15/99 6/14/00	EPA	Soil, Ground water	Received State concurrence, Public notice of Proposed Plan, public comment period 4/19/99 to 6/25/99	Fed = Unknown Contr. = None Est'd Savings: $0
	Type of Change: From - Source removal with off-site disposal and ground water pump and treatment; To - More extensive source removal with off-site disposal. Ground water pump and treatment is now a contingent remedy.					
	Factual Basis: Changes were deemed necessary based on new site information discovered during an EPA 1996/1997 Removal Action. The area and extent of source material at the site was found to be greater than previously determined.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 Sapp Battery Salvage, FL	9/26/86 6/29/00 (ESD)	6/1/00 6/29/00	PRP	Soil, Debris	State concurred on ESD; Fact Sheet sent out to mailing list	Fed = 20hrs. Contr. = 5hrs. Est'd Savings = $0
	Type of Change: From - On-site stabilization and solidification of soil containing battery casings and on-site disposal; To - On-site separation of soil and battery casing; then stabilization, solidification and on-site disposal of contaminated soil; and on-site treatment and offsite disposal of battery casings.					
	Factual Basis: During a Removal Action, it was determined that stabilization and solidification of the soil and battery casings together was not technically feasible.					
Region 4 - FY 01						
Region 4 Cape Fear Wood Preserving, NC	6/30/89 3/23/01 (ROD-A)	10/1/00 3/23/01	EPA	Ground water	State concurred on Proposed Plan, public comment period, public meeting 11/14/00	Fed = 120 hrs. Contr. = 6 hrs. Est'd Savings = $0
	Type of Change: From - On-site ground water pump and treat until cleanup goals are met; To - On-site pump and treat with natural attenuation to meet cleanup goals.					
	Factual Basis: Information about the area and extent of soil contamination was discovered during the soil Removal Action.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 4 Cecil Field Naval Air Station, FL	6/24/96 1/25/01 (ROD-A)	6/1/99 1/25/01	Navy	Ground water, Soil	State concurred on Proposed Plan, public comment period	Fed = 40 hrs. Contr. = 0 hrs. Est'd Savings = $1.4M
	Type of Change: From - In-situ ground water treatment and on-site biotreatment of contaminated soils; To - Monitored natural attenuation of ground water and off-site disposal of contaminated soils.					
	Factual Basis: After the contaminated soils were excavated and placed in the biotreatment area, ground water monitoring indicated that natural attenuation was occurring. During biotreatment O&M, it was determined that treatment costs were going to be significantly higher than planned. Off-site disposal was found to be more cost effective.					
Region 5 - FY 00						
Region 5 Conrail Rail Yard (OU2), (Elkhart) IN	6/28/91 interim 9/9/94 final 9/27/2000 (ROD-A)	2/00 9/00	PRPs	Ground water, Soil	State concurred with amended remedy. Public comments were addressed in Responsiveness Summary.	Fed = None Contr. = None Est'd Savings = $6.1M
	Type of Change: From - Extract and treat ground water to MCLs, monitoring, and institutional controls, and in-situ treatment of soil; To - Technical impracticability waiver for Dense Non-Aqueous Phase Liquids (DNAPL) on rail yard property, hydraulic containment of DNAPL source areas, natural gradient flushing of dissolved portion of ground water plume, drag strip source remediation, monitoring of ground water and contingent remedy.					
	Factual Basis: New information was collected during Remedial Design.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Fernald OU4 (Silos Project 1 & 2), OH	12/7/94 7/31/00 (ROD-A)	3/97 7/00	EPA, DOE	Ground water, Soil, Sludge	State concurred with amended remedy. State submitted extensive comments during formal public comment period.	Fed = 120 hrs. Contr. = 40 hrs. Est'd Savings = $2.5M
	Type of Change: From - Soil removal, decanting of sludge, vitrification, and off-site disposal; excavation of soils and replacement with clean backfill; and pump and treatment of ground water; To - Removal of the contents of silos 1 and 2 and treatment using chemical stabilization; disposal of soil and debris offsite.					
	Factual Basis: A problem with the initial sign and performance of vitrification remedy resulted in the remedy update.					
Region 5 Industrial Excess Landfill, OH	7/17/89 3/1/00 (ROD-A)	1990 3/00	EPA	Ground water, Soil, Landfill gas and wastes	State provided comments during public comment period. State wanted long-term monitoring program that includes limited radiation testing.	Fed = None Contr. = $10-20K Est'd Savings = $12.3M
	Type of change: From - Install multi-layer RCRA Subtitle C cap over landfill, expansion of existing methane venting system; extract and treat ground water by air stripping, carbon adsorption, and flocculation/sedimentation/filtration. Remedy includes monitoring and institutional controls.. ; To -Institutional controls, redesigned landfill cover, monitored natural attenuation for ground water, and expansion of existing methane venting system.					
	Factual Basis: Post-ROD sampling results showed that EPA could eliminate the pump and treat system because there was no evidence that the plume of contamination exists outside of site boundaries.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Johns-Manville Corp., OU1, IL	6/30/87 2/9/93 (ESD) 9/22/00 (ESD)	2000 9/00	PRP	Air, Ground water, Soil, Surface water	State did not concur with ESD. State wants current landfill regulations to apply to closure of ponds.	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From - Cover soil, monitor ground water, surface water, and air; pave two parking lot areas; resurface roadways; and apply rip rap along treatment ponds; To - Closure of remaining treatment ponds and on-site landfill areas.					
	Factual Basis: Closure of manufacturing facility in 1998 and pond closure is more cost-effective and has more long term effectiveness than continually pumping storm water run-off into the former waste water treatment system.					
Region 5 Lemon Lane Landfill OU1, IN	8/13/84 5/12/00 (ROD-A)	9/95 5/00	EPA	Soil, Solid waste	State concurred with amended remedy. City and county support the remedy.	Fed = None Contr. = $600K* Est'd Savings: N/A part of Westinghouse/ Bloomington
	Type of Change: From - Incinerate PCB-contaminated materials, cap site with synthetic liner, and solid waste removal; To - Hot spot removal and off-site disposal and capping with RCRA Subtitle C cap, and consolidate landfill.					
	Factual Basis: Federal court decision stating that landfill must be remediated by 12/31/00. Also, the original remedy could not be implemented as selected and recent data from nearby residential wells necessitated a remedy change. *Note: The initial incineration was never implemented due to public opposition and the state passing laws preventing the review of the permits. Therefore, the site needed complete investigation with multiple sampling events.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 New Lyme Landfill, OH	9/27/85 11/16/99 (ROD-A)	9/98 11/99	EPA, State	Ground water, Soil, Leachate	State concurred with amendment	Fed = None Contr. = None Est'd Savings = $9.4M
	Type of Change: From **-** On-site treatment of ground water using biological disc, sodium hydroxide precipitation and granular activated carbon, and on-site consolidation of sediment. Remedy includes ground water monitoring; To **-** Close down ground water treatment facility and amend long-term ground water monitoring program including a contingency plan.					
	Factual Basis: The favorable results of a focused feasibility study preceded the remedy update.					
Region 5 NL Industries Taracorp Lead Smelter, OU1, IL	3/30/90 1995 (ESD) 9/19/00 (ESD)	8/00 9/00	Federal enforcement	Soils, Debris, Ground water	Some State input.	Fed = Unknown Contr. = Unknown Est'd Savings = $2.5
	Type of Change: From - Excavate more than 94,000 cubic yards of lead-contaminated soil and debris, consolidate and cover with a RCRA multi-media cap, remove all on-site drums to an off-site facility for recovery and install ground water collection/containment system; To - Monitored Natural Attenuation.					
	Factual Basis: Favorable ground water monitoring data preceded the remedy update.					
Region 5 Onalaska Municipal Landfill, OU1, IL	8/90 9/29/00 (ESD)	9/13/00 9/29/00	EPA, State	Ground water	State involved with ESD and agreed with modification	Fed = 80 hrs. Contr. = None Est'd Savings = $600K
	Type of Change: From - Install landfill cap; extract and treat ground water, and install air injection system to enhance bioremediation; To - New State standards for several site-related chemicals.					
	Factual Change: Information obtained during long-term Remedial Action. The new Wisconsin ground water Preventive Action Limits (PALs) allow the use of standard laboratory detection limits.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Sangamo Electric Dump/Crab Orchard, OU1, IL	8/1/90 6/23/00 (ESD)	11/23/98 6/00	Federal Facility	Ground water, soil	State concurred, community reviewed the ESD	Fed = 130 hrs. Contr. = None Est'd Savings = $2.5M
	Type of Change: From - Excavate and treat soil and sediment using incineration or In-Situ Vitrification (ISV), stabilization/fixation of residues and metal contaminated soil and sediment, on-site disposal of treated material; monitoring of ground water, surface water, and leachate; and institutional controls; To - Multi-phase extraction with limited phytoremediation and monitored natural attenuation to address ground water.					
	Factual Basis: Higher concentrations of TCE were discovered in ground water during post-ROD. Also, there was an increased volume of PCB-contaminated material to be thermally treated from the upper sand and clay layers of the subsurface soil, which will mitigate further degradation of ground water.					
Region 5 - FY 01						
Region 5 Duell and Gardner Landfill Site, MI	9/7/93 8/10/01 (ROD-A)	1996 8/10/01	State	Soil, Ground water	State announced the proposed plan, public meeting	Fed = None Contr. = None Est'd Savings = $3.4M
	Type of Change: From - Low-temperature treatment of contaminated soil, carbon adsorption treatment of ground water and capping of the landfill; To - Revised soil and ground water cleanup standards; reduced volume of soil to be remediated by excavation and disposal; eliminated LTTD from the remedy; required long-term monitoring; use restrictions or institutional controls for ground water; and construction of landfill cap.					
	Factual Basis: Data from pre-designed investigation determined that extent of contamination in the soil and ground water is less and size/mass of ground water plumes appear to have stabilized or decreased since the remedial investigation. Additionally, the State revised its cleanup levels, which resulted in a reduction in the volume of soil requiring remediation at the site.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Fields Brook Sediment Operable Unit, OH	9/30/86 8/15/97 (ESD #1) 9/30/97 4/8/99 (ESD #2) 8/17/01 (ESD #3)	10/00 8/01	PRPs (ESD #3)	Sediments (ESD #3 also affected the Floodplain/Wetland Operable Unit)	State was neutral on ESD #3 (State was consulted, but did not actively participate in the ESD review process).	Fed = None* Contr. = None* Est'd Savings = $0*
	Type of Change: From - Excavate and solidify sediments and place in an on-site landfill; To - ESD #3 - modified sediment and floodplain/wetland RODs to allow on-site thermal treatment of DNAPL-impacted soil and sediment. Basically, the ESD allowed for a change of treatment location without a change in the type of treatment.					
	Factual Basis: ESD #3 - Discovery of a layer of DNAPL under the sediment and floodplain resulted in a larger volume of material that required thermal treatment. *Note: ESD #3 allowed a change in the location of the thermal treatment of highly contaminated sediments. The ESD was initiated when an area of DNAPL saturated sediment and soils was identified. The early 1986 ROD allowed on-site thermal treatment. However, as part of ESD #1, thermal treatment of sediments was moved off-site since the volume of material requiring treatment were expected not to make on-site treatment cost-effective. The cost change is assumed to be neutral because the ESD returns to the original on-site thermal treatment determination.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Fields Brook Flood Plains/Wetlands Operable Unit, OH	9/30/86 8/15/97 (ESD #1) 9/30/97 4/8/99 (ESD #2) 8/17/01 (ESD #3)	10/00 8/01	PRPs	Soil	State was neutral on ESD #3 (State was consulted, but did not actively participate in the ESD review process).	Fed = Unknown* Contr. = Unknown* Est'd Savings = Unknown*
	Type of Change: From - Excavate soils, backfill with clean soil, on-site containment with a cover, and disposal either on-site or off-site; To - ESD #3 - modified sediment and floodplain/wetland RODs to allow on-site thermal treatment of DNAPL-impacted soil and sediment. For soils, the ESD extended the technical determinations from the sediment operable unit that required thermal treatment of highly contaminated material.					
	Factual Basis: ESD #3 - Discovery of a layer of DNAPL under the sediment and floodplain resulted in a need to thermally treat highly-contaminated soils. The ESD extended the approach used in the adjacent impacted sediments. *Note: ESD #3 allowed a change in the location of the thermal treatment of highly contaminated sediments. Since highly-contaminated soils had not previously been identified in the floodplain/wetland area, this ESD required additional work (and thus additional costs) within this OU. The ESD extended the technical determinations from the sediment operable unit to address soils that had been impacted by DNAPL and had moved from under the brook channel to the floodplain.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Galesburg/Koppers Co., IL	6/30/89 8/29/01 (ESD)	7/30/00 8/1/01	PRP	Ground water	Dual signature, no public meeting	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown*
	Type of Change: From - Shallow interception trenches and deeper pumping wells to contain and extract contaminated ground water; To - Ground water pumped from lower part of aquifer and treated in the well head and then recirculated into the top of the aquifer instead of being extracted, treated and then discharged.					
	Factual Basis: The PRPs performed pump tests and found too much water would be generated to dispose of effectively. Pilot tests of the in-situ treatment technology worked effectively to reduce concentrations below target levels. *Note: The estimated cost savings are likely significant because the PRP is no longer responsible for paying for the disposal of treated water.					
Region 5 Metamora Landfill, OU2, MI	9/28/90 9/27/01 (ROD-A)	3/00 6/11/01	PRP	Ground water	State concurred/ no letter sent	Fed = None Contr. = None Est'd Savings = $3.6M
	Type of Change: From - Cap landfill and ground water pump and treat; To - Monitored natural attenuation.					
	Factual Basis: The results of ground water studies demonstrated stability of the VOCs in the ground water plume.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Motor Wheel Inc., MI	9/30/91 7/12/01 (ESD)	1/01 6/01	EPA	Ground water	ROD- State concurred ESD- State did not concur	Fed = None Contr. = None Est'd Savings = $0
	Type of Change: Expanded the original extent of contamination from the perched and glacial aquifer to include the underlying Saginaw aquifer and expanded the scope of the remedial action to include the remediation of the Saginaw aquifer.					
	Factual Basis: Concerns about the migration of the contamination through unconfined intersections of the glacial aquifer and Saginaw aquifer resulted in the remedy update. At time of original ROD, a full contamination study of the Saginaw aquifer was not complete.					
Region 5 Peerless Plating Co., MI	9/21/92 4/5/01 (ESD)	11/99 4/5/01	EPA	Soil	The State concurred on the ESD. Public notice on 3/15/01.	Fed = Unknown. Contr. = None Est'd Savings = $1.0M
	Type of Change: From - Saturated contaminated soil will be excavated to approximately 3 to 4 feet below the water table, but no further; To - Contaminated soils will be excavated only to the water table. Institutional controls are part of the remedial action for the site.					
	Factual Basis: Changes were deemed necessary based on a new site information discovered during the construction of the ground water treatment building. Previously unidentified soil contamination was discovered and found to be widespread in the subsurface over a large portion of the site.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Rasmussen's Dump, MI	3/28/91 7/20/01 (ROD-A)	6/99 3/00	PRPs	Ground water	State announced the proposed plan, public meeting	Fed = None Contr. = None Est'd Savings = $200K
	Type of Change: From - Remedy changed from on-site pump and treat (with soil flushing); To - In-situ ozone oxidation of the remaining contaminated ground water zones. Basically the remedy revised ground water cleanup standards, but discontinued SVOC monitoring and soil flushing. No other ROD requirements were modified.					
	Factual Basis: Data from monitoring events indicated a zone of contamination that may have by-passed the ROD extraction capture system. Changing the ROD remedy from pump and treat to in-situ ozone oxidation to treat all remaining zones of ground water with contamination above clean-up standards will allow the clean-up to proceed more rapidly at reduced expense.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Republic Steel Corp. Quarry, OH	9/30/88 9/28/01	5/30/01 9/28/01	EPA	Ground water, soil, quarry surface water, sediment	State concurrence letter, City of Elyria (RP) involvement in concurrence	Fed = None Contr. = None Est'd Savings = $0
	Type of Change: From - Excavate and remove sediment and soils from drainage ditch and hot spots around edge of quarry, ground water monitoring, and fish and biota study; To - Addition of the institutional controls and deed restrictions to the ROD. In addition, the following provisions were incorporated at the Republic Steel Quarry Site: 1. Any future use of the site must be restricted to heavy industrial use. This indicates that residential use of the property, as well as public access or recreational use of the quarry, its sediments and soil must be prohibited; 2. The use of ground water as a source of drinking water must be prohibited and the use of the City of Elyria municipal water supply as the potable water source for any industrial or commercial development or public use must be required; and 3. The City of Elyria must continue to post and maintain site security and warning signs, as well as maintain the repair of the quarry perimeter fence. Further, the city must conduct sufficient inspections to ensure compliance with any land use and access controls that may be adopted in the future.					
	Factual Basis: The Level II Five-Year Review indicated potential human health risks, not addressed during the Remedial Action that could be mitigated via institutional controls and deed restrictions.					
Region 5 Tippecanoe Sanitary Landfill Inc., IN	9/30/97 9/27/01	8/30/01 9/27/01	PRP	Leachate	Dual signature, no public involvement	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown
	Type of Change: From - Conveying leachate to Publicly Owned Treatment Works (POTW); To - Conveyance to no-site storage for off-site transport and disposal.					
	Factual Basis: The the city indicated an inability to accept the leachate so the PRPs had to find another alternative. Although the ROD allowed conveyance of the leachate to the POTW, the remedy was updated to allow for something other than conveyance to the POTW.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 5 Tri-County LF Co./ Elgin Landfills Superfund Site; OU3, IL	9/30/92 6/25/96 (GW ESD); 4/23/98 (CAP ESD); 7/14/99 (CAP ESD) 7/3/01 (CAP ESD)	4/15/01 7/3/01	PRP	Soil	State concurred verbally; remedy still complied with State ARARs.	Fed = Approximately $2K Contr. = Minimal review Est'd Savings = $1.0M
	Type of Change: From - About 60 % of landfill surface in low permeability, high strength asphalt coverage of landfill surface; About 40 % landfill surface coverage with geosynthetic composite cap; To - 100 % coverage by geosynthetic composite cap.					
	Factual Basis: Under the 7/14/1999 ESD, about 60 % of the Elgin Landfill was going to be covered with low permeability, high strength asphalt cap, and approximately 40 % of the Elgin Landfill was going to be covered in the geosynthetic cap at a total cost of approximately $3,456,638 (landfill cap costs only). By covering the entire landfill with geosynthetic composite, the cost would be reduced to approximately $2,446.520.					
Region 6 - FY 00						
Region 6 Odessa Chromium #1 (OU2), TX	3/18/88 10/25/99 (ESD)	4/99 10/25/99	State	Ground water	State has lead responsibility for the site and proposed change; minimal community interest in change	Fed = None Contr. = $10K Est'd Savings = $500K
	Type of Change: From - Pump and treat system; To - Addition of in-situ ferrous sulfate treatment.					
	Factual Basis: New technology paved the way for the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 6 Odessa Chromium #2 North and South Plumes, TX	3/18/98 10/25/99 (ESD)	4/99 10/25/99	State on South Plume, PRP on North Plume	Ground water	State proposed change; minimal community interest in change	Fed = None Contr. = $10K Est'd Savings = North Plume: $350K (SEQUA Cooperation, PRP Lead) South Plume: $100K (TNRCC, State Lead)
	Type of Change: From - Pump and treat system; To - Addition of in-situ ferrous sulfate treatment.					
	Factual Basis: New technology paved the way for the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 6 Tex Tin Corporation Superfund Site, TX	5/17/99 9/28/00 (ROD-A)	3/7/00 4/5/00	PRP	Ground water, Slag, Soil, Wastes	High interest by community and state. Comments submitted by the community during public comment period and state review and comments on site documents. High city interest to start the cleanup process.	Fed = Unknown Contr. = Unknown Estimated Savings: Approximately $1.5M
	Type of Change: From - Stabilization treatment standards for leachate to meet ground water Maximum Contaminant Levels (MCLs); To - Stabilization treatment standards for leachate to meet RCRA Toxicity Characteristic Leaching Procedure (TCLP) levels since shallow ground is not a potential drinking water source. From - Ground water monitoring; To - Controlling horizontal flow direction with installation of a western slurry wall barrier; managing vertical gradients; reducing discharge to Ponds 24, 25, and 26; identifying and treating soils that could leach contaminants to the shallow ground water; and ground water monitoring.					
	Factual Basis: PRP presented new information that was not available to EPA prior to the signing of the original ROD. New information resulted in the PRPs conducting a supplemental Feasibility Study.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 6 - FY 01						
Region 6 Monroe Auto Equipment Co., (Paragould Pit), AR	9/26/96 11/9/00 (ROD-A)	9/98 11/9/00	PRP	Soil	State had lead role in overseeing PRP's work, and State drafted the ROD amendment. Community was supportive, as revised remedy provided greater reuse possibilities.	Fed = N/A Contr. = N/A Est'd Savings = $0
	Type of Change: From - On-site containment of contaminated soils and sludges; To - Treatment and off-site disposal of same.					
	Factual Basis: Revised remedy was equally protective, provided for reuse of the property, and was favored by the community.					
Region 6 Popile, Inc., AR	2/1/93 9/28/01 (ROD-A)	1997/98 9/28/01	EPA	Soil, Ground water	State supported change; minimal public interest in site.	Fed = N/A Contr. = N/A Est'd Savings = $21.0M
	Type of Change: From - Excavation and onsite biological treatment of contaminated soils and sludges; in-situ bioremediation of deep subsurface soils; To - Containment through maintenance of on-site vault created during Removal Action and some additional capping, plus institutional controls. From - Extraction and treatment of contaminated ground water; To - Technical Impracticability waiver, monitoring, and institutional controls.					
	Factual Basis: Biotreatment pilots failed to achieve cleanup goals, and new data showed that the ground water plume was stable.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 7 - FY 00						
Region 7 Hastings OU 13 (Well 3), NE	6/30/93 11/19/99 (ROD-A)	6/1/99 11/19/99	EPA	Ground water	State concurrence, public comment period and opportunity to meet	Fed = 120 hrs. Contr. = None Est'd Savings = $0
	Type of Change: Continue to use the existing ground water treatment system to reduce contaminant concentrations and reduce clean-up performance goal from the interim target of 31 micrograms per liter (ug/l) to the SDWA MCL of 5 ug/l. Time period and costs expected to be within initial estimates.					
	Factual Basis: Better than expected performance of the ground water pump and treat system resulted in the remedy update.					
Region 7 People's Natural Gas, IA	9/16/91 3/1/00 (ESD)	3/29/94 3/11/00	PRP	Ground water	State concurrence and public notice	Fed = None Contr. = None Est'd Savings = $553K
	Type of Change: Implement continued ground water monitoring and delete ground water extraction and treatment.					
	Factual Basis: Residual contamination is below ROD clean-up levels and pumping the alluvial aquifer may accelerate migration of contaminants from the shallow silty sand aquifer and exacerbate the problem.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 7 Pester Burn Pond, KS	9/30/92 3/1/00 (ESD)	6/11/99 3/1/00	State	Sludge	State-lead concurrence and community input	Fed = TBD Contr. = TBD Est'd Savings = $0
	Type of Change: Revised risk assessment and cleanup goal to reflect reasonable land use and modern risk assessment methods resulting in less restrictive land use.					
	Factual Basis: The results of an updated risk assessment lead to the remedy update.					
Region 7 - FY 01						
Region 7 Cornhusker Army Ammunition Plant, OU1, NE	9/29/94 9/20/01 (ROD-A)	3/01 9/01	Federal Facility	Ground water	State concurrence, public meeting	Fed = 80 hrs. Contr. = None Est'd Savings = $11.0M
	Type of Change: From - An off-site pump and treat system; To - Monitored Natural Attenuation (MNA). On-site pump and treat well added. On and off-site institutional controls also added.					
	Factual Basis: Long-term monitoring of ground water and reevaluation of MNA resulted in the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 8 - FY 00						
Region 8 Chemical Sales Site (OU1) CO	6/27/91 3/27/00 (ESD)	9/30/98 6/30/99	EPA, State	Ground water	No significant comments from State and Community.	Fed = 80 hrs. Contr. = $15K Est'd Savings = $200K
	Type of Change: From - High volume extraction from two wells in plume area of site, then treatment via air stripping plus source remediation. To - Natural attenuation of plume plus source remediation.					
	Factual Basis: New information from hydrogeologic investigations indicated that the two wells would be ineffective. The design hydraulic conductivity valve (K valve), derived from the Plume Area geology and aquifer test analyses and conditionally agreed upon by EPA, was 1/3 for the valve reported in the RI/FS and used in the ROD. The change in the K valve resulted in a proportional reduction in predicted capture zone for each of the wells.					
Region 8 Defense Depot Ogden Utah (DDOU), UT	6/26/92 9/13/00 (ESD)	7/1/00 9/13/00	DOD	Soil	No significant comments. ESD signed by the State.	Fed = 100 hrs. Contr. = $200K Est'd Savings = $1.5M
	Type of Change: From - Cleanup levels for soils to residential standards; To - Cleanup levels for soils to industrial standards, increase in amounts of soil excavated, and additional costs.					
	Factual Basis: New area of contamination at the Plain City Canal Site initiated this ESD. DDOU is now closed, and undergoing reuse by private parties. The reuse plan, approved by the City 7 DOD, does not have any residential reuse planned.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 8 Defense Depot Ogden Utah (DDOU), UT	8/3/92 8/9/00 (ROD-A)	6/9/00 8/9/00	DOD	Soil, ground water	No significant comments. ROD Amendment signed by the State.	Fed = 200 hrs. Contr. = $300K Est'd Savings = $3.0M
	Type of Change: From - The 1992 ROD provided for excavation and off-site disposal of all contaminated soils. Shallow ground water was to be treated using air stripping and granular activated carbon.; To - Excavation of additional soil amounts to allow some contaminated soil and debris underneath a warehouse on-site to be left in place; and treatment of ground water using a new ozonation process. The amended remedy also adds additional institutional controls for the affected area.					
	Factual Basis: During implementation of the ROD remedy, a new "hot spot" was discovered (OU4 hot spot). The hot spot consists of a localized source area and the associated ground water plume. Some of the source was located between two warehouses and some was beneath the warehouse. The buildings are to be sold to private parties. The source, outside the buildings, has been excavated and shipped off-site. The buildings will provide a cover for the remaining waste. The contaminated ground water is being extracted and treated. Institutional controls will be placed in the deed.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 8 - FY 01						
Region 8 Rocky Mountain Arsenal, OU 3, CO ESD for Chemical Sewer Remediation (Section 35 and 26)	6/11/96 11/10/00 (ESD)	8/00 10/00	Army	Soil	The State reviewed the draft version of the ESD and provided comments. No comments from the public were received	Fed = Approximately 60 hrs. Contr. = 100 hrs. ($7K) Est'd Savings = $2.5M
	Type of Change: From - Overburden from the excavation area to be removed and stockpiled; excavation of the remaining sewer line and disposal in the on-site hazardous waste landfill; and excavation of human health exceedance soil surrounding removed sewer lines to a depth of 10 feet or 2 feet below the sewer line, whichever is deeper; To - No additional soil surrounding the former chemical sewer will be excavated. The remaining sewer line segments will be excavated under other site projects.					
	Factual Basis: Most of the sewer line was removed as part of a separate response action in 1982. The ROD estimated that contaminated soil (not based on sampling) associated with the former sewer pipe location would extend 10 feet on each side of the sewer line and 10 feet below ground surface or 2 feet below the sewer line, whichever was deeper. Design review of the 1982 response action indicated that a large portion of the associated soil had also been removed. Additional soil sampling was conducted in April 2000 to determine the extent of any remaining exceedance soils. Analytical results were below human health exceedance criteria for soil.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 9 - FY 00						
Region 9 Apache Powder Superfund Site, AZ	9/30/94 9/29/00 (ESD #2)	1997-98 7/00	EPA	Soil	State concurred	Fed = 400 hrs. Contr. = $35K Est'd Savings = $1.5M
	Type of Change: From - Established cleanup standards for Contaminants of Concern (COCs) (either recently detected or without ROD cleanup standards) identified in on-site soils, sediments or drums (soils media components); To - Modified soils cleanup remedies and "no further action" for selected soils media components, where hazardous substances were not detected or did not exceed EPA's selected soils cleanup standards.					
	Factual Basis: Investigative activities, including additional soil sampling and characterization, on site areas of waste disposal indicated that wastes in several areas of the site were non-hazardous or did not exceed EPA's cleanup standards.					
Region 9 Del Norte Pesticide Storage, CA	9/30/85 8/29/00 (ROD-A)	12/99 8/29/00	EPA	Ground water	Accepted by State and community	Fed = 200 hrs. Contr. = None Est'd Savings = $540K
	Type of Change: From - Pump and treat system; To - Containment.					
	Factual Basis: The plume has been stable for five years, no significant difference in concentration or area of plume whether actively pumping and treating or left alone.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 9 Lawrence Livermore National Laboratory, Main Site, CA	8/5/92 2/24/00 (ESD)	11/1/99 2/24/00	DOE	Ground water	State Dept. of Toxic Substance Control and the Bay Regional Water Quality Control Board were involved.	Fed = 120 hrs. Contr. = None Est'd Savings = $263K
	Type of Change: From - In-Situ treatment using Palladium catalyst; To - Closed loop above-ground treatment with Palladium.					
	Factual Basis: VOCs will be reduced more quickly with the remedy update.					
Region 9 March AFB Sites 10 and 15 (OU1), CA	6/20/96 8/24/00 (ESD)	4/1/00 8/24/00	Federal Facility	Soil, ground water	State Department of Toxic Substance Control and Regional Water Quality Central Board reviewed the document and had no changes.	Fed = 80 hrs. Contr. = $2K Est'd Savings = Similar in cost
	Type of Change: From - Excavation and low temperature thermal desorption for soils and extraction and treatment of ground water using liquid phase granular activated carbon absorption; To - Excavate and treat soils by bio-remediation.					
	Factual Basis: Cost re-analysis performed during Remedial Design showed that bioremediation of contaminated soil would provide equal protection at lower cost than thermal desorption, which had been selected in the original ROD based on an estimated lower cost.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 9 Treasure Island Naval Station, Hunters Point Annex, Parcel B, CA	10/7/97 5/5/00 (ESD)	3/00 5/5/00	Navy	Soil	Thirty-day public comment period	Fed = Unknown Contr. = Unknown Est'd Savings = Unknown
	Type of Change: From - Soil cleanup goals based on 1995 Preliminary Remediation Goals (PRGs); To - Soil cleanup goals revised based on October 1999 PRGs.					
	Factual Basis: The Navy revised soil cleanup goals to take into account revisions to the toxicity and other factors included in the calculations of the Region 9 PRGs issued in October 1999.					
Region 9 - FY 01						
Region 9 J. H. Baxter & Co., OU1, CA	9/25/90 3/27/98 (ROD-A) 9/13/01 (ESD)	9/1/00 9/13/01	PRP	Soil	State involved from start, minimal community involvement	Fed = 200 hrs. Contr. = N/A Est'd Savings = $0.3M
	Type of Change: From - Additional treatment of contaminated soil; To - Containment on-site in RCRA cell, without additional treatment.					
	Factual Basis: Non-carcinogenic PAHs were found to have contaminated 800 cubic yards of soil. On-site treatment had not met ROD standard, and soil would have had to be transported off-site for treatment. Since the 1998 ROD amendment enabled the use of a RCRA cell or Corrective Action Management Unit (CAMU), the original ROD standard was not appropriate and was relaxed on site disposal of the soil without additional treatment.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 - FY 00						
Region 10 Bangor Ordnance Disposal, WA	12/10/91 7/18/00 (ESD)	4/96 7/18/00	Navy	Surface water	The State is lead regulatory agency at this site. The change was presented to the Bangor Restoration Advisory Board and a notice was published in a local newspaper.	Fed = 10 hrs. (EPA) Contr. = None Est'd Savings = $250K
	Type of Change: From - Treatment of Site A soil treatment basin leachate prior to discharge; To - Discharge of Site A soil treatment basin leachate without treatment. The ESD also documents the increased costs for the overall cleanup, as compared to the ROD estimate.					
	Factual Basis: The untreated leachate concentrations had leveled off at concentrations slightly above the surface water cleanup level established in the ROD. A literature search and whole effluent toxicity testing demonstrated that discharge of the untreated leachate would be protective of aquatic life.					
Region 10 Harbor Island (Lead), WA Shipyard Sediments OU (Todd Shipyards portion)	11/96 12/27/99 (ESD)	2/99 12/27/99	EPA	Sediments	Fact sheet was sent to 250 individuals	Fed = 100 hrs. Contr. = None Est'd Savings = Unknown
	Type of Change: From - One shipyard sediment OU; To - Two separate shipyard sediments OUs, with an expanded area that requires remediation for the Todd Shipyard OU.					
	Factual Basis: Additional information gathered during remedial design investigations disclosed that the OU boundary did not encompass all of the potentially contaminated sediments requiring remediation.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 Kerr - McGee Chemical Corp. (Soda Springs Plant), ID	9/28/95 7/13/00 (ROD-A)	2/00 7/13/00	PRP	Industrial solid waste	The State concurred in the remedy change. A proposed plan was mailed to the community, and a public meeting was held during the 60-day comment period.	Fed = 430 hrs. Contr. = None Est'd Savings = $75 M*
	Type of Change: From - Recycling calcine tailings and roaster reject materials through an on-site fertilizer plant; To - Cap remaining calcine tailings and roaster reject materials in place. Remainder of remedy was unchanged.					
	Factual Basis: Fertilizer plan was constructed and operated, but was never able to meet the ROD's volume commitment due to technical difficulties with the waste material. *Note: The savings listed are only those from not continuing to operate the fertilizer plant using these wastes as raw materials, minus the cost of capping. EPA did not include fertilizer plant operating costs in the original costs in the original ROD remedy because Kerr-McGee was at the time an operating facility. However, Kerr-McGee indicated that losses of $5M/year were expected with continued fertilizer plant operation. Based on the historical operation of an average 150 tons/day, the fertilizer plant was expected to operate for 16 years resulting in a total operating loss of approximately $80M. The cost of the landfill cap was approximately $5M, resulting in a cost savings of approximately $75M. It is noted that the $75M saving could be considered saved operating costs, instead of as remedy cost savings.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 US DOE Hanford 100 Area, WA 100-HR-3 OU	4/96 10/24/99 (ROD-A)	6/99 10/24/99	DOE, State	Ground water	State concurred with change. Thirty-day public comment period on the proposed plan, with five comment letters received.	Fed = 30 hrs. (EPA) Contr. = None Est'd Savings $8M*
	Type of Change: From - Implement the previously selected pump and treat remedy for a newly characterized ground water plume; To - Implement an innovative in-situ remedy (permeable reactive barrier) for the newly characterized plume.					
	Factual Basis: An additional plume of chromium contamination was discovered beyond the existing pump and treat systems. A 1999 treatability study of the innovative in-situ treatment within the plume showed positive results. *Note: Cost savings are reflected as the estimated difference in the net present value between an additional pump and treat system, and the innovative in-situ technology over a twenty-year period. The selected remedial action is an additional estimated $4.6M over the ROD estimates.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 US DOE Hanford 300 Area, WA 300-FF-1 OU	7/17/96 1/11/00 (ESD)	6/99 1/11/00	EPA, DOE, and State	Soil, Debris	The state supported the ESD, with comments about additional work needed beyond the scope of this ESD. The ESD was discussed with the site-specific advisory board. A fact sheet was mailed out.	Fed = 80 hrs. (EPA) Contr. = None Est'd Savings = $200K
	Type of Change: From - Removal and on-site disposal of contaminated soil and debris from many sites, with treatment to meet Land Disposal Restrictions (LDR) if necessary; To - Removal and on-site disposal of contaminated soil and debris from many sites, with treatment to meet Land Disposal Restrictions (LDRs) if necessary, and a RCRA site-specific treatability variance for one site.					
	Factual Basis: During remediation, one site was unexpectedly found to be contaminated with lead as well as radioactive contamination. Some samples were designated as a lead characteristic hazardous waste.					
Region 10 US DOE INEEL, ID Test Reactor Area (OU 2-13)	12/97 6/23/00 (ESD)	3/00 6/23/00	DOE, EPA, and State	Soil, Ground water	The State supported the changes to the selected remedy. Notice of the ESD was published in seven Idaho newspapers.	Fed = Minimal Contr. = None Est'd Savings = $0
	Type of Change: From - General institutional control requirements; To - More specific institutional control requirements.					
	Factual Basis: Review of the ROD showed that it did not contain adequate details on the institutional controls and how they would be implemented, maintained, and monitored. Additional details on the institutional controls were added to the selected remedy to be consistent with regional guidance issued subsequent to the original ROD.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 - FY 01						
Region 10 Bonneville Power Administration Ross Complex (US DOE), OU1 & OU2, WA	5/6/93 and 9/29/93 1/18/01 (ESD)	6/1/00 1/18/01	EPA	Soil	The State supported the change. A notice of the ESD was published in a local newspaper	Fed = 8 hrs. Contr. = None Est'd Savings = None
	Type of Change: From - Vague institutional control requirements; To - Site-specific and facility-wide institutional control requirements.					
	Factual Basis: The CERCLA Five-Year Review recommended that BPA develop a strategy to better provide for long term administration, implementation and maintenance of institutional controls.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 Frontier Hard Chrome, Inc., OU1 & OU2, WA	12/30/87 and 7/5/88 8/30/01 (ROD-A)	6/97 8/30/01	EPA	Soil, Ground water	State was actively involved in identifying alternative technologies and concurred with the selected remedy. A proposed plan for the amended remedy was released and one generally supportive comment letter was received.	Fed = 100 hrs. Contr. = $70K Est'd Savings = Either $2.2M or $10.4M*
	Type of Change: From - Soil excavation, stabilization and replacement, and extraction and treatment of ground water; To - In-situ treatment of source area ground water and soils using the in-situ redox manipulation.					
	Factual Basis: Post-ROD studies revealed that the originally selected remedies would be ineffective. Further studies identified newly available and cost-effective technologies. *Note: Combined cost estimates, in original soil and ground water RODs, were estimated to be $5.8 million. Based on new site information, the updated costs were estimated to be approximated $14 million. Combined cost of the amended remedy is estimated to be approximate $3.6 million. Thus, the estimated savings would be approximately $2.2 million if you compare the 1987 and 1988 RODs with the amended remedy, or would be $10.4 million if you compared the updated cost estimate for the original remedy and the amended remedy. The ROD amendment uses the updated cost estimates for its comparison.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 Harbor Island (Lead), WA Soil and Ground water Operable Unit	9/30/93 9/26/01 (ESD)	8/16/01 9/25/01	PRP	Soil	The State concurred with the change. An announcement of the ESD was made in the Fact Sheet sent to interested parties, as well as published in a local newspaper.	Fed = 80 hrs. Contr. = $0 Est'd Savings = $2.0M
	Type of Change: From - A hot spot action level for excavation of highly contaminated soil; To - A less stringent hot spot action level for certain well characterized soils that extend under permanent structures.					
	Factual Basis: Additional hot spots have been discovered during the cleanup, and some of the hot spots extended beneath permanent structures that make the costs for cleanup substantially greater. Also, additional information was developed on the risk associated with the weathered materials that demonstrate that this higher action level is protective. This hot spot concentration change is also consistent with recent State cleanup decisions.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 INEEL -Idaho National Engineering Lab (US DOE), ID Test Area North (OU 1-07B)	8/4/95 9/19/01 (ROD-A)	3/30/00 9/19/01	DOE, EPA, State	Ground water	The State participated and concurred in the selection of the remedy and concurred in the remedy change. A proposed plan was released and public meetings were held. In addition, presentations were made to the Citizens Advisory Board.	Fed = 200 hrs. Contr. = $5K Est'd Savings = $1.0M
	Type of Change: From - Pump and treat in all zones of the contaminated plume; To - In-situ bioremediation in the hot spot; pump and treat in the medial zone of the plume (unchanged from the original remedy); and monitored natural attenuation in the distal zone of the plume. Institutional control requirements are unchanged.					
	Factual Basis: Post-ROD treatability studies showed that the use of monitored natural attenuation and an innovative technology, in-situ bioremediation, in combination with the originally selected pump and treat technology, could cleanup the contaminant plume in less time and at a lower cost than the originally selected remedy.					

Summary of Remedy Update Information for FY00 and FY01 for Sites Without Cost Increases

Region Site Name, State	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - Fed/Contr. Est'd Cost Increase
Region 10 Teledyne Wah Chang, WA	9/27/95 9/28/01 (ESD)	2/01 9/28/01	EPA	Soil	State supported change. Notice of ESD published in local newspaper	Fed = $10K Contr. = None Est'd Savings = Unknown
	Type of Change: From - Excavation and off-site disposal of all gamma emitting soil, institutional controls, and site closure requirements; To - In-place management of contamination including some excavation and institutional controls during life of the facility, and modified site closure requirements to capitalize on facility's existing closure requirements under state permit and radiation program administrative rules.					
	Factual Basis: The extent of buried radioactive contaminated soil was significantly less than initially estimated in the RI/FS characterization of the site.					

Appendix A.2:

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Note: The information and data presented in Appendix A.2 represent only a portion of the information available in the decision document. If more information is needed, please refer to the site's ESD, ROD-Amendment, memo-to-file, or letter.

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 1 - FY 00						
Region 1 Stamina Mills Superfund Site, OU1, RI	9/28/90 6/27/00 (ESD)	10/98 8/00	EPA	Sediments, Ground water	State concurrence received	Fed = Unknown* Contr. = Unknown* Est'd Increase = $500K*
	Type of Change: From - Excavation of sediments, placement on existing landfill and capping of existing landfill; To - Excavation of sediments and landfill materials, and off-site disposal at an approved facility; using UV/oxidation to treat contaminated ground water, as well as using air stripping and activated carbon.					
	Factual Basis: Concerns over the structural integrity of the landfill and operational problems with the UV/oxidation technology necessitated modification of site cleanup decisions. *Note: Unable to provide cost increases or cost savings on an OU or ESD basis because the OUs were combined in the remedy action and work was completed by a responsible party.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 1 - FY 01						
Region 1 Brunswick Naval Air Station, OU5, ME	2/12/98 12/27/00 (ESD)	N/A 12/00	Navy	Ground water	State concurred; public meeting held	Fed = $2.5K (EPA) Fed = $5K* (Navy) Contr. = $20K* (Navy) Est'd Increase = $1M* for capital costs to implement ESD Est'd Decrease = $200K annually for plant O&M savings once ESD implemented
	Type of Change: From - Ground water treatment technology from UV oxidation; To - Air stripper and system effluent discharge from publicly owned treatment works to infiltration gallery. Also added Institutional Controls (IC) that were not specified in the original ROD to prevent use of ground water until cleanup goals are attained. These are enforced by a Navy Base Operating Instruction which documents ICs and specifies a process by which they are considered in base construction.					
	Factual Basis: Due to chemical properties of the preliminary contaminate of concern, 1,1,1-TCA, UV oxidation could only reduce concentrations by 50%. Air stripping achieves greater than 99% concentration reduction, thus allowing treatment effluent to be discharged to a ground water infiltration gallery. Both the air stripper and infiltration gallery will have lower operating costs than the original UV treatment with discharge to the public owned treatment works. Institutional Controls were initially enforced in effect by the Navy, but are now formally documented and enforced. *Note: Costs are estimates, but unable to provide precise cost increases and savings as the work was completed by the responsible party.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 1 Otis Air National Guard Base/Camp Edwards, OU5, MA	9/30/98 10/31/00 (ESD)	6/00 10/00	Federal Facility	Soil	State concurred on 10/24/00; informal public comment period - 8/28/00 to 9/26/00	Fed = 100 hrs. Contr.= Included below Est'd Increase = $84K
	Type of Change: From - No further action; To - Include additional, similarly contaminated area into excavation planned for adjacent storm drainage area originally proposed in 1998 ROD.					
	Factual Basis: Drainage swale at the Chemical Spill 2 (CS-2) Study Area determined to contain elevated levels of soil contaminants such that a No Further Action Decision Document for CS-2 could not go forward. EPA directed AFCEE to prepare an ESD to document the inclusion of the CS-2 drainage swale into the 1998 ROD, and then proceed with No Further Action for remainder of CS-2 Study Area.					
Region 3 - FY 00						
Region 3 Tybouts Corner Landfill, DE	3/6/86 5/17/92 (ESD) 7/26/00 (ESD)	10/96 5/31/00	PRP	Soil	State concurred on 5/31/00; notice of ESD in local newspaper; Administrative Record updated	Fed = 125 hrs. EPA Contr. = None Est'd Increase = $900K
	Type of Change: From - Install temporary gas vending system along northern boundary of the site (Red Lion Road) to prevent off-site migration of landfill gas and monitor basements in residential dwellings near the landfill; To - Improve and expand active and passive gas venting systems by installing permanent above-ground system along the Red Lion Road corridor that will operate with other system components now in place.					
	Factual Basis: Additional investigation in 1997 and 1998 resulted in the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 4 - FY 00						
Region 4 Marzone Inc./Cheveron Chemical Co., GA	9/30/94 5/2/00 (ROD-A)	10/1/99 5/2/00	PRP	Ground water	The State concurred on the amended ROD. The proposed plan public comment period was 12/15/99 to 1/15/00.	Fed = Unknown Contr. = Unknown Est'd Increase = $100K
	Type of Change: From - Traditional ground water pump and treatment technology; To - Passive Funnel and Gate Innovative Treatment Technology utilizing iron filings and in-situ treatment of ground water.					
	Factual Basis: A treatability study was conducted during the Remedial Design and resulted in the remedy update.					
Region 4 - FY 01						
Region 4 Whitehouse Oil Pits, FL	5/30/85 7/16/01 (ESD)	10/1/98 7/16/01	EPA	Ground water, Soil, Sediment	State concurred on ESD; Fact Sheet sent out to mailing list	Fed = 40 hrs. Contr. = 10 hrs. Est'd Increase = $4.5M
	Type of Change: From - On-site construction of a lime curtain, slurry wall and capping of contaminated soils; To - Off-site cleanup of contaminated sediments and on-site construction of slurry wall and larger cap. Lime curtain was deleted from design.					
	Factual Basis: During Remedial Design, it was determined that off-site sediments needed to be remediated, the lime curtain was not needed, and area of the slurry wall and cap needed to be increased in size.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 5 - FY 01						
Region 5 Lower Ecorse Creek Dump, MI	7/17/96 7/13/01 (ROD-A)	3/1/00 3/29/01	EPA	Soil	Both the State and City of Wyandotte were in full support of the change. No comments were received from the general public.	Fed = 100 hrs. Contr. = None Est'd Increase: $35K
	Type of Change: From - Excavation and disposal of shallow and deep soil; resampling, if necessary, and restoration of residential areas affected by excavation; To - Soil cover.					
	Factual Basis: Test pitting results indicated that the affected soil could safely be kept in place.					
Region 7 - FY 00						
Region 7 Bruno Co-op Association/Associated Properties, OU1, NE	9/30/98 8/25/00 (ESD)	1/25/00 8/25/00	EPA	Ground water	State support, community availability sessions, and comment period	Fed = 100 hrs. Contr. = $125K Est'd Increase: $590K
	Type of Change: From - Active pump and treat remedy to restore aquifer; To - Update provides greater detail in the assessment of operation and maintenance costs as well as increased costs for capital expenditures and contingencies.					
	Factual Basis: Re-evaluation of the ex-situ conventional pump and treat system, as compared with in-situ ground water circulation well technology that generated a better cost estimate, resulted in the remedy update.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 7 - FY 01						
Region 7 ACE Services, KS	5/5/99 9/13/01 (ROD-A)	2/00 9/13/01	EPA	Ground water, Soil	State concurred, public meeting	Fed = 60 hrs. Contr. = $10K Est'd Increase = $4M
	Type of Change: From - Extract and treat ground water and discharge treated water into creek tributary, Publicly Owned Treatment Works (POTW), or to beneficial reuse; To - Increase the size of treatment plant, number of extraction wells, method of treatment, demolition of old site buildings, and provision of city drinking water supply to several residents.					
	Factual Basis: Additional ground water monitoring during Remedial Design indicated that the plume was much larger than previously thought. Based on increased extraction volumes, the type of treatment was changed to be more cost effective. The plume had also spread to neighboring wells requiring the provision of another water supply. An increase in plume size required increase in plant size, thus requiring a change in location back to the original site that required demolition of site buildings.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 8 - FY 00						
Region 8 Denver Radium Shattuck Chemical Site, OU8, CO	1/28/92 6/16/00 (ROD- A)	5/14/99 12/20/99	Five-Year Review with State, City & County elected officials, Public	Ground water, Soil	State, City & County of Denver, and local community requested that EPA consider other alternatives to the onsite remedy to allow for restricted use of the site.	Fed = 5000 hrs* Contr. = $300K Est'd Increase = $35M
	Type of Change: From - Under the original remedy, all buildings were demolished and disposed of off-site. A monolith was placed on-site, consolidating the excavated Shattuck facility soils along with soils from vicinity properties and from the adjoining railroad right-of-way. The monolith was capped with low-infiltration barrier materials and rip-rap surface; To - Removal of the monolith from the site along with any additionally identified contaminants in excess of the cleanup levels specified in the amended ROD. The monolith and any additional identified contaminated soils would be excavated and disposed of offsite at a licensed/permitted disposal facility or would be recycled at a licensed facility. Complete removal of the monolith and additional identified contaminants would leave no residual contamination, pursuant to the original remedy. Ground water monitoring will continue as specified in the original ROD.					
	Factual Basis: Additional data on contaminated soils was provided. *Note: A community activist group sued EPA for an inadequate five-year review of the on-site solidification/stabilization of low-level radioactive soil. A focused remedy review process included an unprecedented public dialogue with stakeholders including OSWER, Region 8, PRP, State, City, and community groups. This process involved long facilitated meetings and an EPA HQ contractor conducted the independent Five-Year Review. Public comment on this proposed plan was extensive and much effort was needed to be as responsive as possible.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 9 - FY 00						
Region 9 San Gabriel Valley, Area 1 Whittier Narrows Operable Unit, CA	3/31/93 11/10/99 (ROD- A)	1996 11/99	EPA	Ground water	State shared cost; community notified with proposed plan; extensive coordination with basin and down gradient water purveyors.	Fed = 5000 hrs.* Contr. = $2M Est'd Increase = $24M
	Type of Change: From - Monitoring only; To - Ground water containment by pump and treat system (11,000 gpm).					
	Factual Basis: Concentrations of contaminants in ground water increased to unacceptable levels, necessitating an active remedy. *Note: The work for the ROD amendment included installing several additional multiport wells in the area to determine the extent of the newly detected contamination in both the shallow and deep ground water. The extent that the plume had traveled into the Whittier Narrows OU from an up-gradient source needed to be determined. Additional detected compounds, ground water modeling, data analysis and outreach to surrounding stakeholders was also needed.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 9 - FY 01						
Region 9 Purity Oil Sales Inc., OU2, CA	9/30/92 6/30/96 (ESD) 3/30/01 (ESD)	4/98 3/01	Community, EPA	Soil	Substantial community involvement throughout process and ongoing	Fed = 800 hrs.* Contr. = $200K Est'd Increase = $3M
	Type of Change: From - No relocation of residents; To - Temporary relocation of 32 families and permanent relocation of 16 families.					
	Factual Basis: Unacceptable short-term impacts to all residents of an adjacent trailer park resulted in the remedy update. Contaminated soil discovered beneath fence line residents necessitated permanent relocations. *Note: The remedy update resulted from numerous meetings with the community and other stakeholders from April 1998 until March 30, 2001 when the ESD was written. There were many negotiated meetings with the County of Fresno and the community as well as oversight of construction activities that started in October 2000. The ESD requires the relocation of residents and many hours were spent preparing the residents for relocation and determining the actual relocation offer. Also during January 2001, EPA conducted field investigation work along the site perimeters that resulted in the generation of a technical memorandum that documented the discovery of contaminated soils beneath the trailers and beneath the Golden State Market.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 10 - FY 00						
Region 10 Commencement Bay Nearshore/Tideflats, WA Thea Foss, Wheeler-Osgood and Hylebos Waterways	9/30/98 8/30/00 (ESD)	6/99 8/30/00	EPA	Sediments	Extensive coordination and concurrence from State and Puyallup Tribe. One public comment period prior to issuance of the draft ESD. A 65-day public comment period on the ESD, plus a public meeting. 180 comment letters received.	Fed = Approximately 2,500 hrs.* Contr. = Approximately $25K Est'd Increase = Approximately $25M
	Type of Change: From - Site use restrictions, source control, natural recovery, sediment remedial action (i.e., confinement and habitat restoration), and monitoring; To - More specific remedial actions consistent with the ROD, and identification of disposal sites for containment of dredged contaminated sediments.					
	Factual Basis: Pre-remediation design studies at the individual waterways better defined the area and volume exceeding the cleanup levels that lead to the identification of specific areas where natural recovery would be appropriate, and specific areas to be dredged or capped. The estimated volume of material that needs to be dredged increased approximately 80% to 100% from the ROD estimates. In addition, the post-ROD studies helped EPA identify which disposal sites would be most appropriate to safely contain the dredged sediments. *Note: The remedy update required extensive EPA resources to do the following activities: 1) significant detailed review of design studies on the two major waterways; 2) complicated negotiations with numerous PRPs and various regulatory agencies; 3) complex source control issues involving major storm water control and a NAPL source area from a historic coal gasification plant; and 4) habitat migration needs.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 10 US DOE Hanford 100 Area, WA 100-IU-6-OU	7/99 6/15/00 (ESD)	2/00 6/15/00	EPA, DOE, State	Wastes, Soil, Debris	The State supported and concurred on the ESD. The Hanford Advisory Board was briefed on the ESD and a notice of availability was published in the local newspaper.	Fed = 80 hrs. (EPA) Contr. = None Est'd Increase = $1.3M
	Type of Change: From - Remediation of 46 soil contamination areas through removal of contaminated soil, structures and associated debris; treatment as required to meet the disposal facility requirements; and disposal at an on-site facility; To - Remediation of 48 soil contamination areas through removal of contaminated soil, structures and associated debris; treatment as required to meet the disposal facility requirements; and disposal at an on-site facility.					
	Factual Change: The ROD allowed the selected remedy in the ROD to be applied to similar, but separate sites that met specific criteria, if the public was informed about the additional sites through an ESD. Based on the post-ROD investigations, two additional sites were determined to require remediation and to met the criteria established in the ROD.					
Region 10 US DOE Hanford 300 Area, WA 300-FF-5-OU	7/17/96 6/15/00 (ESD)	2/00 6/15/00	EPA, DOE, State	Ground water	The State supported and concurred on the ESD. The Hanford Advisory Board was briefed on the ESD and a notice of availability was published in the local newspaper	Fed = 80 hrs. (EPA) Contr. = None Est'd Increase = $180K
	Type of Change: From - Interim remedy for ground water beneath the 300 area complex and the immediate vicinity; To - Interim remedy for ground water beneath all of the 300 area waste sites.					
	Factual Change: Additional ground water plumes have been found beyond the original boundaries of the ground water OU. The original selected interim remedy was determined to be inappropriate for these additional plumes.					

Summary of Remedy Update Information for FY00 and FY01 for Sites With Cost Increases

Region Site Name, State	Date of <u>Original ROD</u> Date of Change (ESD/ROD-A)	Date Review <u>Commenced</u> Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands - <u>Fed/Contr.</u> Est'd Cost Increase
Region 10 US DOE INEEL, ID Argonne National Laboratory - West (OU9-04)	9/98 2/14/00 (ESD)	11/99 2/14/00	DOE	Soil	Notice of ESD published in six newspapers. State fully involved in decision.	Fed = 10 hrs. (EPA) Contr. = None Est'd Increase = $65K
	Type of Change: From - In-situ phytoremediation for all sites; To - In-situ phytoremediation at some sites, ex-situ phytoremediation at one site, and excavation and on-INEEL disposal for the rest of the sites.					
	Factual Basis: Bench-scale tests showed that remediation goals could not be met in a reasonable time frame at some of the sites. In- situ phytoremediation changed to ex-situ phytoremediation due to security upgrade needs.					

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