

**Interim
Record of Decision (ROD) Amendment,
Upper Basin of the Coeur d'Alene River**

**Bunker Hill Mining
and Metallurgical Complex
Superfund Site**

**Part 3 Section 4.0
Responses to Individual Comments**

United States
Environmental Protection
Agency Region 10

August 2012

Responses to Individual Comments

This section presents EPA's responses to individual comments received on the Proposed Plan. EPA received comments in various forms including letters, emails, and oral testimony at community meetings. The comments and EPA's responses are organized into the following attachments (the attachments are provided in electronic format):

- **Attachment A:** Index of Commenters and Responses
- **Attachment B:** Master Comment List
- **Attachment C:** Responses to Federal Agency Comments
- **Attachment D:** Responses to State Agency Comments
- **Attachment E:** Responses to Native American Tribe Comments
- **Attachment F:** Responses to Local Jurisdiction Comments
- **Attachment G:** Responses to Local Community/Special Interest Organization Comments
- **Attachment H:** Responses to Business Comments
- **Attachment I:** Responses to Individual Comments

Attachment A presents an Index of all comments sorted in two methods. First, all commenters are listed alphabetically by the last name of the person or the organization providing the comments. It provides the locations (Attachment and page number) of the comments and EPA's responses. Second, all comment are listed alphabetically/numerically by the comment number, along with the locations of the comments and responses.

Many comments address similar issues. In these cases, the response for a given issue is provided once. Responses to later comments on the same issue refer to the master comment list where this response is provided. These responses are referred to as "master comment responses" and are found in Attachment B. When using Attachment B, the user may find that the referenced response addresses more issues than he or she raised. In these cases, it is expected that the user will be able to identify those parts of the referenced response that apply. In other cases, a comment may raise multiple issues. In such cases, the user may be referred to several master comment responses for a complete response to all issues raised. An overview of the issues raised and EPA's responses is provided in Part 3, Section 3.0, Responsiveness Summary.

In Attachments C through I, the comments and responses are sorted alphabetically by the last name of the commenter. Each comment letter, email, and oral testimony comment was assigned a unique identification number (e.g., 1365213). Each comment was assigned a unique comment number (e.g., LJ36-1). Many commenters submitted more than one comment letter. In these cases, a separate identification number and comment number were assigned for each set of comments. This approach helped EPA ensure that all comments were addressed.

In Attachments C through I, an image of the original comment is shown on the left side of the page and includes EPA's delineation. The right side of the page presents EPA's response to that comment.

A number of commenters' names were illegible, and these commenters are listed as "Unknown." EPA has included their comments in Attachment I and has responded to the comments where possible.

As provided in the CERCLA statute, Section 117(b), EPA is only responsible for providing responses to each of the "significant" comments, criticisms, and new data. Comments not meeting this statutory criterion have nonetheless been recorded in this section, and responses have been provided to the extent possible.

ATTACHMENT B

Master Comment List

TABLE B-1

Master Comments and Responses
Interim Record of Decision (ROD) Amendment, Upper Basin of the Coeur d’Alene River, Bunker Hill Superfund Site

Master Comment No.	Response
I248-1	<p>The route of the pipeline conveying water to the Central Treatment Plant (CTP) is assumed to follow existing rights-of-way along public roads. This will be confirmed during the design phase. By following existing public roads, the impact on landowners and the risk of encountering unexpected contamination is reduced.</p>
I295-1	<p>EPA is required under CERCLA, the Superfund law, to address unacceptable risks to human health and the environment at the Bunker Hill Superfund Site. While significant cleanup has taken place in the Basin, there is still contamination in site soil, sediments, groundwater, and surface water that poses unacceptable risks to human health and the environment. As described in the ROD Amendment, EPA and other agencies have done many studies over the years that document the human health risks posed by contamination in the Coeur d’Alene Basin. The primary human health concern in the Upper Basin is excessive lead in the blood of young children and pregnant women. Site-specific analysis of blood lead data paired with environmental lead data demonstrate that complex exposure pathways exist. Human health has been and continues to be EPA’s priority for cleanup, and EPA has targeted cleanup actions to reduce human health exposures. EPA is committed to addressing the remaining unacceptable human health risks in the Upper Basin.</p> <p>Cleanup of Upper Basin areas will also greatly reduce the amount of lead being transported down the Coeur d’Alene River and settling in Lower Basin areas and Coeur d’Alene Lake, posing potential risks to human health. Cleanup of Upper Basin areas will also reduce the risk of future recontamination of remediated Lower Basin areas, thereby minimizing the need for follow-up cleanup work in those areas.</p> <p>The remedy protection actions included in the cleanup plan will protect the existing human health clean-soil barriers installed within Upper Basin communities from tributary flooding and other high-precipitation events, thereby protecting the cleanup investments made as part of the existing Selected Human Health Remedies for OUs 1, 2, and 3.</p>
I295-2	<p>EPA is committed to meaningful community participation throughout the Superfund process in the Coeur d’Alene Basin. Over the years, EPA has engaged the public through all phases of its work. Most importantly, EPA has encouraged the public to be involved in selection of the remedies for OUs 1, 2, and 3 and, most recently, the Selected Remedy for the Upper Basin.</p> <p>Throughout the ROD Amendment process, EPA met regularly with the Basin Environmental Improvement Project Commission’s (the Basin Commission’s) Upper Basin Project Focus Team (PFT), a group focused on technical issues related to cleanup. The PFT members include interested citizens and representatives from the State of Idaho, Shoshone County, the U.S. Bureau of Land Management, the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Coeur d’Alene and Spokane Tribes, and the State of Washington. In addition to its meetings with the Upper Basin PFT, EPA has provided a wide range of opportunities for community participation in the selection of a remedy for the Upper Basin. Since late 2008, EPA has hosted and/or attended about 60 meetings to share information and gather input for development of the Focused Feasibility Study Report and the Proposed Plan and, ultimately, the ROD Amendment. EPA has engaged local residents, elected officials, community groups, and many other stakeholders in the decisionmaking process. This outreach has included working with the Basin Commission, its Technical Leadership Group, and the Citizens’ Coordinating Council.</p> <p>EPA’s efforts to provide opportunities for public participation more than satisfy the requirements CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan. The input EPA has received from the public has been instrumental in the changes made to the Upper Basin cleanup plan since the Proposed Plan was issued. The ongoing involvement of the community will be an important part of the cleanup as it moves forward.</p>

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Master Comment No.	Response
I295-3	<p>EPA will pay for much of the proposed cleanup with funds from legal settlements between mining companies and the federal government. CERCLA creates a liability scheme that prioritizes cleanup by potential responsible parties (PRPs). In this instance EPA has maximized cost recovery from the PRPs. The cleanup will proceed as quickly as possible while balancing the need to let interest accrue on settlement monies, allowing for completion of the cleanup throughout the Upper and Lower Basins. Taxpayer dollars used to fund the cleanup, if any, will augment settlement funds.</p> <p>At this time, EPA has recovered the largest amount of available settlement funds—more than \$573 million—from the ASARCO bankruptcy proceedings completed in 2009. Of this total, \$494 million is apportioned for EPA response activities and the remainder will be used for mitigation of natural resource damages. An independent Work Trust has been established to manage the ASARCO settlement funds and conduct the EPA-approved cleanup. The money held by the Work Trust is invested by a private investment firm, allowing this fund to continue to grow. Spending and investing under this Work Trust will be carefully managed by EPA to ensure the continued growth of the Trust while balancing the need to conduct cleanup in an efficient and a timely manner.</p> <p>In 2011, a significant settlement was reached with Hecla Mining Company. Under this settlement, Hecla will pay \$263.4 million plus interest to the United States, the Coeur d’Alene Tribe, and the State of Idaho to resolve claims stemming from releases of wastes from its mining operations. Most (75 percent) of the recovery funds will be used for response actions at the Bunker Hill Superfund Site. The remaining amount will fund natural resource restoration projects.</p>
I474-1	<p>EPA agrees that the Silver Valley has great potential for economic growth. EPA believes that the cleanup will benefit the local economy in a variety of ways. The Selected Remedy will boost economic growth by significantly improving the environment for residents and tourists, creating jobs with the money that will be spent on the Upper Basin cleanup, and providing opportunities for formerly contaminated land to be redeveloped. Retail development in Smelterville, the Galena Ridge golf community, and the Trail of the Coeur d’Alenes are examples of the types of redevelopment that can occur on remediated properties.</p> <p>Since 1985, millions of dollars have been spent on cleanup, primarily for yard remediation and cleanup in the Bunker Hill Box. Significant spending will continue for the cleanup actions in the Upper Basin. EPA encourages the hiring of local businesses and workforce for the cleanup work. To that end EPA is providing training opportunities, through the Superfund Job Training Initiative, for local citizens in order to successfully compete for these jobs.</p> <p>Cleanup of additional properties in the Silver Valley will provide opportunities for development that do not currently exist. EPA is committed to working with the mining industry and Silver Valley businesses and landowners to conduct the cleanup in ways that are consistent with the current and future land uses desired by the community. Throughout the cleanup, there will be opportunities for the public to provide input on implementation planning through the established Basin Environmental Improvement Project Commission process.</p> <p>The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA’s goal is to complete cleanup in the Upper Basin as quickly as possible and with minimum disruption. Most of the cleanup work will be in the areas of greatest contamination, which are generally in less populated areas higher in stream drainages. Implementation of the Selected Remedy is expected to take about 30 years rather than the estimated 50 to 90 years for the Preferred Alternative in the Proposed Plan.</p> <p>How long it takes to implement the Selected Remedy will ultimately depend upon the annual funding rate, the ability to work in multiple areas simultaneously, the overall pace of cleanup, and how well the environmental system responds to cleanup actions. As the cleanup progresses, EPA will routinely look for</p>

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Master Comment No.	Response
	<p>opportunities to speed up cleanup activities while identifying locations where no further or more limited action is required. Using the adaptive management process, EPA will also continually evaluate the effectiveness of the cleanup actions, as well as the need for additional actions.</p>
I474-2	<p>Under the Superfund law, EPA has a responsibility and the authority to take actions to protect human health and the environment. EPA's decision-making process has been a careful, National Oil and Hazardous Substances Pollution Contingency Plan (NCP)-consistent, and collaborative effort which included input from state and local governments, tribes, other federal agencies, the Basin Commission, and the public. EPA has listened and responded to comments received on the Proposed Plan to reduce the scope of the Selected Remedy. The total estimated cost of the Selected Remedy as presented in the ROD Amendment is \$635 million. Implementation of the Selected Remedy is expected to take about 30 years.</p> <p>EPA does not believe that Hecla's 10-Year Plan would be comprehensive enough to protect human health and the environment throughout the Upper Basin. Most of the sites identified in Hecla's 10-Year Plan are also priority sites in EPA's Selected Remedy. However, the actions included in Hecla's 10-Year Plan only address a fraction of the contamination that needs to be and is addressed under EPA's Selected Remedy. Hecla's 10-Year Plan also relies heavily on less protective remedial actions such as "toe pull-back" (moving the base of waste piles away from creeks and the SFCDR), regrading, soil capping, and revegetation. Furthermore, elements of Hecla's 10-Year Plan may not be technically feasible. For example, the plan calls for contaminated adit and seep discharges to be collected and treated at lagoon-type systems which, as proposed, have serious technical flaws and are not likely possible to implement.</p> <p>In contrast to Hecla's 10-Year Plan, EPA's Selected Remedy is NCP-consistent and identifies effective and proven actions. For example, the remedy includes methods, such as excavation of highly contaminated floodplain sediments and tailings, and groundwater collection and treatment, to address contamination that is inaccessible for removal (such as materials located beneath roads and communities). EPA believes these actions will be more effective in reducing metals loading to the SFCDR and its tributaries, and will more comprehensively protect human health and the environment.</p>
I521-9	<p>The yard cleanup remedy was selected as part of the human health component in EPA's 2002 ROD for OU 3 (EPA, 2002; www.epa.gov/superfund/sites/rods/fulltext/r1002032.pdf). The current ROD Amendment for the Upper Basin does not include any changes to the human health remedy selected in the 2002 ROD, and focuses on cleanup actions to improve surface water and groundwater quality and to reduce contamination in soils and sediments where actions are taken.</p> <p>IDEQ administers the Basin Property Remediation Program (BPRP), also referred to as the yards program. The BPRP implements yard cleanups, which include the removal of "contaminated soil" in places where humans are frequently exposed, such as yards, parks, and public properties to address the human health component of the cleanup.</p>
I527-1	<p>EPA agrees that the total cost of the Selected Remedy is a considerable amount of money and has significantly reduced the scope of the Selected Remedy from that of the Preferred Alternative identified in the Proposed Plan so that the total cost is decreased from \$1.3 billion to about \$635 million. Implementation of the Selected Remedy is expected to take about 30 years. EPA will pay for much of the proposed cleanup with funds from legal settlements between mining companies and the federal government. At this time, the largest amount of available settlement funds—more than \$573 million—is from the ASARCO bankruptcy proceedings completed in 2009. Of this total, \$494 million is apportioned for EPA response activities and the remainder will be used for mitigation of natural resource damage. Approximately \$8 million are to be used for work in OU 2, the non-populated areas in the 21-square mile Bunker Hill Box surrounding Kellogg. An independent Work Trust has been established to manage the ASARCO settlement funds and conduct the EPA-approved cleanup. The money held by the Work Trust is invested, allowing this fund to continue to grow. Spending and investing under this Work Trust will be</p>

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Master Comment No.	Response
	<p>carefully managed by EPA to ensure the continued growth of the Trust while balancing the need to conduct cleanup in an efficient and a timely manner.</p> <p>In 2011, a significant settlement was also reached with Hecla Mining Company. Under this settlement, Hecla will pay \$263.4 million plus interest to the United States, the Coeur d’Alene Tribe, and the State of Idaho to resolve claims stemming from releases of wastes from its mining operations. Most (75 percent) of the recovery funds will be used for response actions at the Bunker Hill Superfund Site. The remaining amount will fund natural resource restoration projects.</p> <p>Pursuant to the terms of the consent decrees approving these settlements, EPA may only use the recovered funds to perform the response actions it selects. ASARCO funds are specifically limited to response actions in OU 3. Hecla settlement funds can be used for select response actions throughout the Bunker Hill Superfund Site.</p> <p>Regarding the "infrastructure and our economy," see responses to Comments Nos. I58-5 and I474-1. In response to the water rights issues, see response to Comment No. SA4-12.</p>
I54-2	<p>EPA believes that the cleanup will benefit the local economy in a variety of ways. The Selected Remedy will boost economic growth by significantly improving the environment for residents and tourists, creating jobs with the money that will be spent on the Upper Basin cleanup, and providing opportunities for formerly contaminated land to be redeveloped. Retail development in Smelterville, the Galena Ridge golf community, and the Trail of the Coeur d’Alenes are examples of the types of redevelopment that can occur on remediated properties.</p> <p>Since 1985, millions of dollars have been spent on cleanup, primarily for yard remediation and cleanup in the Upper Basin, including the Bunker Hill Box. Significant spending will continue for the cleanup actions in the Upper Basin. EPA encourages the hiring of local businesses and workforce for the cleanup work. To that end EPA is providing training opportunities, through the Superfund Job Training Initiative, for local citizens in order to successfully compete for these jobs.</p> <p>Cleanup of additional properties in the Silver Valley will provide opportunities for development that do not currently exist. EPA is committed to working with the mining industry and all Silver Valley businesses and landowners to conduct the cleanup in ways that are consistent with the current and future land uses desired by the community.</p>
I54-3	<p>The Selected Remedy does call for significant excavation and consolidation of contaminated materials in either engineered repositories or “waste consolidation areas.” For the purposes of the Selected Remedy, repositories are considered to be large, centrally located areas within the Upper Basin where contaminated soil excavated during cleanup actions is transported to, managed, and secured. EPA’s preference will be to locate repositories in areas that are already contaminated, such as on top of historical mine tailings piles. The Big Creek Repository, Page Repository, Osburn Tailings Ponds, and Star Ponds are examples of former tailings impoundments that either have been or could be turned into cleanup repositories. Repositories help protect people and the environment by dramatically decreasing the chance that people and wildlife will be exposed to metals-contaminated soil, sediments, and debris. Without repositories, cleanup cannot proceed and the public will continue to be exposed to high metals levels. Repositories constructed under the Selected Remedy will be engineered to securely contain waste materials, which will prevent contaminants from being released to surface water, groundwater, or air at concentrations above state and/or federal standards.</p> <p>Waste consolidation areas will differ from the centrally located repositories. Waste consolidation areas will be established within tributary watersheds (e.g., the Ninemile and Canyon Creek Watersheds) in areas where significant volumes of waste are already present from historical mine and mill site operations. Rather than haul these wastes out of the watershed to a regional repository, EPA’s first step will be to look for locations to safely consolidate and cap wastes at the particular mine and mill site being cleaned up or in</p>

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	<p>another area of the watershed where the consolidated waste can be better protected from surface water runoff and erosion. This approach will significantly reduce the number of haul trucks driving through communities such as Woodland Park, Wallace, and Mullan. The approach has already been used successfully in the Upper Basin and, as a result, the volume of soil hauled to repositories has been minimized. Good examples of the successful use of waste consolidation areas include the Moon Creek Watershed and the Golconda Mine near Wallace. Pre-design investigation work has also led to the identification of a location for a waste consolidation area in the East Fork of Ninemile Creek drainage. Based on this new information, select cleanup methods for sites in the Ninemile Creek drainage have been modified to optimize the use of this local waste consolidation area and eliminate the need for regional repository space for these materials.</p> <p>EPA, IDEQ, and the Basin Commission are working together to identify locations for new repositories in the Upper Basin. There are many opportunities for community involvement in repository siting. To learn more, please contact Don Carpenter, IDEQ, at 208-373-0141 or Ed Moreen, EPA, at 208-664-4588, or visit: http://basincommission.com/TLG_PFT_Repository.asp.</p>
154-5	<p>The Selected Remedy includes remedy protection actions to protect remediated properties from SFCDR tributary stormwater runoff. These actions will help protect areas that have been cleaned up—i.e., keep clean areas clean, which is a common sense goal. Remedy protection includes actions such as local drainage controls to ensure that clean gravel or soil barriers are not washed away or recontaminated during heavy rain or snow events or by tributary flooding.</p> <p>To date, EPA has addressed these types of issues on a site-by-site and as-needed basis. In some instances, recontaminated barriers have been replaced by new clean barriers. This approach may have been acceptable in the short term, but it is not proactive in addressing recontamination concerns. EPA recognizes that it is better to be more systematic about these types of recontamination problems. By being proactive EPA intends to reduce the chance that clean barriers will be recontaminated. Based on hydraulic analyses, field experience over the last 15 years, and input from local public works and elected officials, EPA and IDEQ have identified areas most likely to be recontaminated by tributary flooding or heavy rain or snowfall. Basin-wide flooding issues (including SFCDR flooding) are not addressed in this ROD Amendment.</p> <p>EPA worked collaboratively with IDEQ to develop and evaluate remedy protection alternatives in the Focused Feasibility Study (FFS). The Selected Remedy includes specific mitigation actions (referred to as remedy protection projects) within the primary Upper Basin communities (Pinehurst, Smelterville, Kellogg, Wardner, Osburn, Silverton, Wallace, and Mullan) to protect existing Selected Human Health Remedies at risk from recontamination. The remedy protection projects include drainage controls such as replacing culverts, improving channel capacity, controlling erosion, and other actions to reduce the risks posed to the existing remedies. In addition to the eight primary communities, the Selected Remedy anticipates additional remedy protection work in the Upper Basin side gulches (defined as drainage areas outside the primary communities). Remedy protection projects in the side gulches will be similar to work selected for the primary communities and will be described in future decision documents as appropriate.</p>
154-6	<p>Based on requests from the public after the Proposed Plan was issued, the comment period was extended 90 additional days, for a total of 135 days, for public and stakeholder comment on both the Proposal Plan and the Draft Final FFS Report.</p>
154-8	<p>Collection of contaminated groundwater for treatment will reduce surface water flows in Canyon Creek and the SFCDR, but not significantly. EPA has modeled these reductions during low-flow and average-flow conditions. The modeling estimates that the maximum stream flow reductions in Canyon Creek and the SFCDR during extreme low-flow conditions would be about 10 percent and 16 percent, respectively. To put this in perspective, in a “typical” year, dry season flow rates, as represented by flows in the 10 percentile, have been shown to fluctuate by 21 percent on average over the period of record. Therefore, a fluctuation</p>

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	<p>of 16 percent is within the range of average natural low-flow fluctuation from year to year. Under average-flow conditions, the reductions are estimated to only be about 1 percent in Canyon Creek and 5 percent in the SFCDR. Further, this reduction will only occur for a small stretch of river between the collection points in Osburn and Canyon Creek and Kellogg, where the same volume of clean treated water will be returned to the SFCDR. EPA has estimated this expected stream flow reduction using the Basin-wide groundwater model and historical stream flow monitoring data collected by the U.S. Geological Survey (see the Final Focused Feasibility Study (FFS) Report [EPA, 2012, <i>Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site</i>] for documentation of these analyses). Before conducting any water treatment project, EPA will perform additional study and remedial design to ensure that stream flows are not reduced to a point that will have negative effects on water rights holders or aquatic life. During and after remedy implementation, stream flows and collected flow rates will be monitored. Water collected for treatment will include both contaminated groundwater and adit discharges. Surface water will not be collected directly from tributaries and the SFCDR.</p> <p>Problems from stream flow reduction are not expected but, if any were to occur, collection rates could be modified to minimize or eliminate any problems. In addition, adit discharges currently slated for treatment at the Central Treatment Plant (CTP) could be treated onsite using semi-passive technologies. Semi-passive treatment approaches that may be applied include ex situ chemical or biological treatment. In situ treatment approaches were considered in the FFS and may be evaluated further for application at specific sites. Following treatment at the CTP, the same volume of clean water will return to the SFCDR at Kellogg, albeit downstream from onsite treatment locations. Onsite treatment of the adit discharges involves smaller, semi-passive systems and returns the collected water back to the water body from which it came, resulting in no net reduction in stream flow. The flow rate of adit discharges to be collected is uncertain at this time. Adit discharge flow rates will be determined during design. Early activities will include the sampling of adit discharge flows under both low- and high-flow conditions to inform planning for future water treatment actions and evaluation of projected stream flow reductions, including adit discharges.</p> <p>Some comments received during the public comment period have speculated that water treatment will eliminate or greatly reduce water flows. These comments are flawed in that they are based on impossible flow scenarios. For example, maximum groundwater and adit discharge flows, which only take place under high-flow conditions (conditions during peak runoff periods as occur in spring runoff or rain-on-snow events), were compared to the lowest flow conditions, which happen during dry periods like late summer and early fall. This logic is flawed. Peak flows do not occur during the dry season. Therefore, any assessment of stream flow reduction must consider both stream flows and projected groundwater and adit discharge collection under the same flow regime (i.e., comparison of high-flow to high-flow and low-flow to low-flow conditions).</p>
I54-9	<p>Stream flow reduction will only occur for a brief stretch of the SFCDR between the collection points in Osburn and Canyon Creek and Kellogg, where the water will be treated and returned to the river. All groundwater collected for treatment will be treated and discharged in Kellogg. Therefore, water will be replenished within the Upper Basin.</p> <p>See response to Comment No. I54-8 for additional information regarding the minimal reduction in stream flow expected, even during extreme low-flow periods.</p>
I54-12	<p>The cost estimate was developed according to CERCLA guidance for the Feasibility Study (FS) process. EPA guidance states that the accuracy of the cost estimates presented in an FS should be within a range of -30 percent to +50 percent, and that a discount rate of 7 percent should be used to estimate total project costs in today’s dollars (EPA, 2000, http://yosemite1.epa.gov/EE/EPA/ria.nsf/vwTD/D80FCAF00F14E6A585256A6F004C10B2). According to guidance, this 7 percent discount rate accounts for inflation and the rising costs of construction over time. In estimating the cost of the Selected Remedy in the ROD Amendment, 2009 dollars are the basis for the</p>

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	<p>net present value cost estimate, consistent with cost estimates presented in the Focused Feasibility Study (FFS) Report (EPA, 2012, <i>Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site</i>). The cost estimate includes the costs of both the remedial actions and operation and maintenance. Cost estimates for work to be performed will be further refined during the remedial design process, and over time as the remedy is implemented.</p>
158-1	<p>Due in part to extensive public concern about the duration of cleanup, EPA has decided to reduce the scope of the Selected Remedy by prioritizing the remedial actions that were identified as EPA’s Preferred Alternative in the Proposed Plan. This resulted in a reduction in estimated cost from \$1.3 billion to \$635 million. The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA’s goal is to complete cleanup in the Upper Basin as quickly as possible and with minimum disruption. Most of the cleanup work will be in the areas of greatest contamination, which are generally in less populated areas higher in stream drainages. Implementation of the Selected Remedy is expected to take about 30 years.</p> <p>How long it takes to implement the Selected Remedy will ultimately depend upon the annual funding rate, the ability to work in multiple areas simultaneously, the overall pace of cleanup, and how well the environmental system responds to cleanup actions. As the cleanup progresses, EPA will routinely look for opportunities to speed up cleanup activities while identifying locations where no further or more limited action is required. Using the adaptive management process, EPA will also continually evaluate the effectiveness of the cleanup actions, as well as the need for additional actions.</p>
158-2	<p>EPA agrees that \$1.3 billion is a considerable amount of money and has significantly reduced the scope of the Selected Remedy so that the total estimated cost is decreased by about half to \$635 million. This includes capital costs as well as long-term operation and maintenance costs. EPA’s implementation planning process will also ensure that money is spent wisely to protect human health and the environment.</p> <p>Under the Superfund law, EPA has a responsibility and the authority to take actions to ensure that the contamination in the Coeur d’Alene Basin is cleaned up to protect human health and the environment, and to communicate this cleanup to the public. The Preferred Alternative as presented in the Proposed Plan provided an overall vision of the required cleanup in the Upper Basin. Based on comments received from the public, EPA decided to reduce the scope of this ROD Amendment. The Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. The Selected Remedy will make substantial progress toward the overall cleanup goals. EPA will ensure that settlement monies are spent wisely and will maximize the cleanup completed using these funds. This will be accomplished by rigorous implementation planning and pacing cleanup over time, allowing interest to accrue on the settlement monies.</p> <p>EPA has listened and responded to comments received on the Proposed Plan to reduce the scope of the Selected Remedy. Furthermore, EPA has developed and documented an implementation approach to identify where the work starts, how it will proceed, how sites may be removed from the Selected Remedy should additional data indicate acceptable exposure risks, and how the community can be involved. The bottom line is that actions will be planned and implemented to ensure that those providing the highest value in terms of effectiveness per dollar spent are conducted first, with consideration of a variety of other factors in consultation with the Basin Commission’s Upper Basin Project Focus Team and other community members. EPA understands that \$635 million is still a large sum of money, but cleaning up contamination from a hundred years of past mining practices in this large and complex area will require considerable time and resources. The actions included in the Selected Remedy will provide a significant step forward in site cleanup and EPA is committed to getting the job done as efficiently as possible.</p> <p>EPA will pay for much of the proposed cleanup with funds from legal settlements between mining</p>

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Master Comment No.	Response
	<p>companies and the federal government. The cleanup will proceed as quickly as possible while balancing the need to let interest accrue on the settlement monies, allowing for completion of the cleanup throughout the Upper and Lower Basins. Taxpayer dollars used to fund the cleanup, if any, will augment settlement funds.</p> <p>At this time, EPA has recovered the largest amount of available settlement funds—more than \$573 million—from the ASARCO bankruptcy proceedings completed in 2009. Of this total, \$494 million is apportioned for EPA response activities and the remainder will be used for mitigation of natural resource damages. An independent Work Trust has been established to manage the ASARCO settlement funds and conduct the EPA-approved cleanup. The money held by the Work Trust is invested by a private firm, allowing this fund to continue to grow. Spending and investing under this Work Trust will be carefully managed by EPA to ensure the continued growth of the Trust while balancing the need to conduct cleanup in an efficient and a timely manner.</p> <p>In 2011, a significant settlement was also reached with Hecla Mining Company. Under this settlement, Hecla will pay \$263.4 million plus interest to the United States, the Coeur d’Alene Tribe, and the State of Idaho to resolve claims stemming from releases of wastes from its mining operations. Most (75 percent) of the recovery funds will be used for response actions at the Bunker Hill Superfund Site. The remaining amount will fund natural resource restoration projects.</p>
I58-4	<p>The Upper Basin ROD Amendment identifies an interim remedy that includes priority cleanup actions. The total estimated cost of the Selected Remedy as presented in the ROD Amendment is \$635 million. The Selected Remedy is expected to require about 30 years to implement, but will be significantly shorter in duration than implementation of the Preferred Alternative as presented in the Proposed Plan. EPA anticipates that through the adaptive management process and development of additional decision documents as necessary, the Upper Basin can be effectively cleaned up.</p>
I58-5	<p>EPA is confident that cleanup and mining can coexist. The Upper Basin cleanup will address historical contamination from mining activities that began in the 1880s. Historical mine waste disposal practices were much different than they are today. For example, until 1968, significant amounts of mine wastes were discharged directly into creeks and rivers. This widespread contamination from past mining and smelting activities led to the necessity of CERCLA cleanup actions. Today, ongoing mining activities are regulated by state and federal laws other than CERCLA.</p> <p>In response to public comments and concerns, the Upper Basin ROD Amendment clarifies the decision process for whether CERCLA cleanup actions will be conducted at “Active Facilities” (i.e., mining facilities among others). This process was developed through cooperation between EPA, IDEQ, and the community members and stakeholders involved in the Basin Environmental Improvement Project Commission’s Upper Basin Project Focus Team. For the purposes of the ROD Amendment, an Active Facility is defined as a property where the owner is actively managing the risk of a release, or potential release, of a hazardous substance through regulatory mechanisms outside CERCLA that enforce compliance to protect human health and the environment. Active Facilities will continue to operate under those governing regulations and will be required to address the release of hazardous substances, as necessary, under those governing regulations. CERCLA cleanup actions will be conducted if data indicate that a release of hazardous substances has occurred or is occurring from a facility that poses risks to human health or the environment, and that this release is not being satisfactorily managed or addressed by the facility under an existing regulatory program.</p> <p>EPA is confident that cleanup and mining can continue together in the Upper Basin. Where cleanup of historical contamination from past mining activities is planned in areas that are being currently mined, developed, or expanded, EPA will coordinate investigation, design, and cleanup work with the property owners. This approach will minimize disruption to Active Facilities.</p>

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	<p>One of the provisions of the Consent Decree between Hecla and EPA is for both parties to attend an annual planning meeting to coordinate the cleanup with ongoing exploration or development by Hecla. EPA is willing to coordinate with other mining companies in the Basin in a similar way, and welcomes further discussions with them.</p> <p>Cleanup is not expected to restrict future mining and exploration in the Silver Valley. EPA is aware that mining has been an important part of the history and economy of the Silver Valley and will continue to be in the future. EPA also understands that mining companies need certainty for planning and investing, and is committed to completing cleanup actions in ways that allow mining operations to continue in compliance with environmental regulations.</p>
1691-25	<p>Consistent with and pursuant to the Successor Coeur d’Alene Custodial and Work Trust Agreement, and the bankruptcy order approving the Trust, the Trustee manages the funds held by the Trust. In general, the Trust will perform work as a limited-purpose successor to ASARCO, which means that the Trust is stepping into the shoes of ASARCO when performing response actions in the Coeur d’Alene Basin. The Trustee will manage the Trust to maximize value and carry out cleanup actions selected and approved by EPA. EPA will oversee the Trust, although as the beneficiary, it cannot direct the Trust’s work. EPA’s decision documents (e.g., RODs and ROD Amendments) will define the work that the Trust performs, which will be further clarified in annual work plans that are approved by EPA. EPA will continue to coordinate with the communities and local, state, tribal, and federal partners in the development, selection, and prioritization of Superfund response actions.</p> <p>As previously noted, the Trust will perform work pursuant to EPA decision documents. EPA will continue to involve the Basin Commission, the public, and other stakeholders in the development, selection, and prioritization of response actions. However, decisions about which projects the Trust (rather than EPA or other agencies appointed by EPA) would perform in a given year will be proposed by the Trustee and approved by EPA.</p>
18-2	<p>The infiltration rate of water beneath the sludge pond was estimated by EPA to be 9 gallons per minute (gpm) as noted in the comment and documented in the following report: <i>Current Status, Conceptual Site Model, Operable Unit 2, Bunker Hill Mining and Metallurgical Complex Superfund Site</i> (CH2M HILL, 2006). The sludge in the pond is comprised of precipitated metal hydroxides, gypsum, and water. Alum is not used as a treatment reagent (coagulant) at the Central Treatment Plant (CTP), and the CTP influent contains relatively little aluminum; thus, the sludge is not “mostly alum” as indicated in the comment. The metals are sequestered in the precipitated solids such that the water that drains from the sludge (and thus the water that infiltrates the Central Impoundment Area [CIA]) is near the same quality as the CTP effluent. Although this water is clean as it drains from the sludge, it is possible that it could become recontaminated to some degree as it infiltrates through the CIA materials.</p> <p>Capital costs for construction of a new sludge pond are estimated at \$7.33 million dollars, which is estimated to provide 30 years of capacity. Groundwater beneath the CIA currently constitutes one of the largest sources of metals loading to the SFCDR. Given that, the incremental increase in load that would be attributed to the 9 gpm that is estimated to be infiltrating from the sludge pond does not constitute a significant source of metals to groundwater. Because this water is not a significant source of contamination, and because construction of new sludge disposal capacity is so costly, closure of the existing sludge pond at this time would not be the best use of cleanup funds. The existing pond could last 5 years or more, depending on the implementation rate of the remedy, deferring construction of a replacement pond, as well as saving at least 5 years of capacity.</p>
1822-11	<p>EPA respects the history and historical landmarks of the Silver Valley, and will carry out the Selected Remedy consistent with the substantive requirements of the National Historic Preservation Act, as indicated in the final ROD Amendment, Part 2, Section 13.2 and Table 13-2.</p>

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1822-14	<p>Due in part to extensive public concern about the duration and cost of cleanup, EPA has decided to significantly reduce the scope of the Selected Remedy by prioritizing the remedial actions that were presented as EPA’s Preferred Alternative in the Proposed Plan. The Upper Basin Selected Remedy is an interim remedy which identifies the priority remedial actions that are expected to provide the greatest reduction of contamination in the SFCDR and its tributaries and protection of in-place human health barriers in local communities. EPA reduced the scope of Alternative 3+ in the Preferred Alternative for OU 3 from 345 to 145 mine and mill sites included in the Selected Remedy. The total estimated cost of the Selected Remedy as presented in the ROD Amendment is \$635 million, a significant reduction from the \$1.3 billion estimate for the Preferred Alternative identified in the Proposed Plan.</p> <p>With help from stakeholders and community members involved in the Basin Commission’s Upper Basin Project Focus Team (PFT), EPA has developed a logical and transparent prioritization process over the past 2 years. EPA used this prioritization process to reduce the scope of the Selected Remedy as compared to the Preferred Alternative. A site-by-site review was conducted to identify the highest priority sites for remedial action and, thus, those that are included in the Selected Remedy. The Upper Basin PFT provided input to assist EPA in prioritizing actions to include in the Selected Remedy. This site-by-site review is described in detail in the Focused Feasibility Study (FFS) Report (EPA, 2012, <i>Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site</i>). Key considerations for this review included: (1) prior remedial actions and effectiveness of those actions; (2) active land uses; (3) potential human health risks; (4) downstream water quality; (5) site-specific data such as location, contaminant concentrations,¹ riparian acreage, and erosion potential; and (6) access road requirements.</p> <p>EPA conducted a sampling program at 51 of the 348 sites in the Preferred Alternative in the summer of 2011 to support the prioritization process. The purpose of the sampling program was to gather information and data with which to reduce the number of sites included in EPA’s Preferred Alternative in the Upper Basin Proposed Plan. The results of the 2011 sampling program for selected mine and mill sites in the Upper Basin indicated that 42 sites of the 51 sites and their associated remedial actions could be removed from those included in the Selected Remedy documented in the ROD Amendment for the Upper Basin. EPA will continue to evaluate select sites to determine whether the site will be removed from further consideration for remedial action or retained for implementation of remedial actions as part of the Selected Remedy for the Upper Basin.</p>
1828-10	<p>In response to public and stakeholder comments on the Proposed Plan, EPA reviewed this part of the remedy and decided to modify the hydraulic isolation action in the SFCDR between Wallace and Elizabeth Park, as documented in the ROD Amendment. The full length of the SFCDR stream liner has been eliminated. In addition, the groundwater collection drain has been shortened significantly to extend only through the Osburn area (about 4,600 feet). Interactions between surface water and groundwater, and metals loading to the SFCDR are relatively well understood in this area. This is because more investigations have been conducted for the Osburn area compared to the remaining reaches of the SFCDR between Wallace and Elizabeth Park. This information has enabled actions in that area to be refined. EPA will monitor and evaluate the effectiveness of the modified approach as the remedy is carried out using the adaptive management process. Similarly, the remaining SFCDR reaches between Wallace and Elizabeth Park will be monitored to determine whether any additional action(s) may be needed to meet water quality standards.</p>

¹ The review of site-specific contaminant concentrations included data collected following the publication of the Proposed Plan in the summer of 2011 at select source sites in the Upper Basin. The results of this sampling effort are documented in the FFS Report (EPA, 2012, *Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site*).

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1899-7	<p>Water collected for treatment will include both contaminated groundwater and adit discharges. Early design activities will include modeling or sampling to inform planning for future water treatment actions, including suitability for treatment at the Central Treatment Plant (CTP) or onsite using semi-passive technologies. Through ongoing adaptive management and the CERCLA Five-Year Review process, EPA anticipates using the information gained to make adjustments to implementation plans and to evaluate and implement new technologies where appropriate.</p> <p>The use of in situ alkaline permeable reactive barriers (PRBs) was specifically evaluated by EPA during the Focused Feasibility Study (FFS) (see Appendix F in EPA, 2012, <i>Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site</i>) and a typical conceptual design was developed for this technology. At this time, there are no sites where the technology is planned for implementation. However, as additional site data are collected, sites where in situ PRBs could be used may be identified. One of the primary limitations for use of the technology at the Bunker Hill Superfund Site is the relatively high rate of groundwater flow in most areas. High groundwater velocities require thick PRBs for sufficient hydraulic retention times and effective treatment. The thicker the PRB, the higher the cost.</p>
LC21-9	<p>EPA and IDEQ concluded that a repository at the East Mission Flats location could be safely built and managed, and would not spread contamination to surrounding areas. Flood concerns were addressed early in the design. In response to early public input after the initial flood evaluation, the agencies did an even more detailed study. That re-evaluation resulted in changes to designs for the site. The repository was engineered to prevent metals from getting into the groundwater under the site. The repository was also designed to prevent sediments from eroding during floods. The sides of the repository have an engineered surface designed to resist erosion from flowing water, even during the 100-year flood event. Plus, the soil is tightly compacted so that most water will run off the sloped repository sides. This means that even in a flood, the soil in the repository will remain dry except around the outer edges. Water will not flow through the repository picking up contaminants.</p> <p>The East Mission Flats site is mostly level and shielded from fast-flowing water during floods. It is protected by I-90 to the south, Canyon Road to the north, and the dredge road to the west. During a flooding event, water would fill the site gradually, like a reservoir, instead of flowing quickly through the site. Erosion controls help ensure that materials do not get eroded by rain or snowmelt. For extra protection, the lower slopes of the repository are armored with rock or vegetation to make it stable during floods.</p> <p>The Selected Remedy does call for significant excavation and consolidation of contaminated materials in either engineered repositories or “waste consolidation areas,” EPA, IDEQ, and the Basin Commission are working together to identify locations for new repositories in the Upper Basin. There will continue to be many opportunities for community involvement in repository siting.</p> <p>EPA intends to explore all opportunities to reduce the amount of contaminated material slated for disposal in repositories by making use of waste consolidation areas within upstream drainages, where practicable. For example, work conducted by EPA and the ASARCO Work Trust during the 2011 field season has identified several areas that can become waste consolidation areas in the Ninemile Creek drainage. The potential waste consolidation areas identified in Ninemile Creek will have sufficient capacity to contain all contaminated material estimated to be generated from source control and removal actions in the Ninemile Creek drainage, and will alleviate the need for approximately 460,000 cubic yards of disposal space in regional repositories. EPA is committed to continuing to seek out and develop additional upstream drainage waste consolidation areas to reduce the amount of material that would need to be placed in regional repositories.</p>
LC32-2	<p>It is true that many of the jobs created as part of the Selected Remedy will be seasonal, but they could be relatively long term (considering that implementation will take about 30 years). The influx of construction</p>

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	activity and workers will also have the added benefit of supporting local businesses (hotels, restaurants, etc.). Job creation is not part of EPA’s mandate; however, if jobs are created through decisions and actions implemented by EPA, this is a positive aspect of the cleanup for the local economy.
LC33-10	See response to comment I54-8 for more information about surface water flows in Canyon Creek and the SFCDR. Additionally, the Selected Remedy, including the water collection portions of it, will not be implemented all at once but rather over a period of about 30 years. During this time, stream flow and biological monitoring will continue to support evaluations of remedial effectiveness and potential impacts of the Selected Remedy on things like stream flow, stream temperature, and ecosystem health. Adverse effects on animals and plants are not anticipated, though if observed, the Selected Remedy will be modified as needed to minimize such effects.
LC33-8	<p>EPA conducted extensive analyses and evaluations of background conditions as part of the OU 3 Remedial Investigation/Feasibility Study (RI/FS). These analyses and evaluations conclusively demonstrated that the dominant source of metals is from mining-related activities, not natural sources.</p> <p>A comprehensive analysis of background concentrations, representing more than 10,000 samples, can be found in the <i>Final Technical Memorandum (Revision 3) Estimation of Background Concentrations in Soil, Sediment, and Surface Water in the Coeur d’Alene and Spokane River Basins</i> (URS Greiner 2001). Because metal concentrations are naturally variable, the analysis quantified the range of background concentrations for each metal and selected the 90th percentile for soil and sediment and the 95th percentile for surface water as the representative background concentrations. The background concentrations identified for the Upper Basin represent the most mineralized conditions and are different from background sediment concentrations for the Lower Basin, Coeur d’Alene Lake, and Spokane River. The background soil/sediment and surface water metal concentrations are far below, indeed are small fractions of, the existing concentrations in the mining-impacted media targeted for cleanup by the Selected Remedy. Furthermore, the background soil and sediment lead levels are far below the soil/sediment cleanup level (530 milligrams/kilogram) reflected in the Selected Remedy. As described in the ROD Amendment, the numerical cleanup criteria for soil and sediment may be revised as additional information becomes available.</p>
LC37-9	Some of the water treatment for the Upper Basin Selected Remedy will be conducted at the Central Treatment Plant (CTP), an active water treatment plant in Kellogg, Idaho, that treats acid mine drainage (AMD) and metals-contaminated water. The CTP is currently operated in low-density sludge mode and contains excess (unused) treatment capacity during much of the year. The 2001 ROD Amendment for OU 2 (EPA, 2001, <i>EPA Superfund Record of Decision Amendment: Bunker Hill Mining & Metallurgical Complex, OU 02, Smeltonville, ID</i> , EPA ID: IDD048340921) identified the need for the CTP to be upgraded to improve efficiency and increase reliability, and to achieve lower concentrations of metals in the plant’s discharge to better meet water quality standards. The Upper Basin Selected Remedy includes expanding the CTP to accommodate additional flows as well as the upgrades identified in the 2001 ROD Amendment that have not yet been implemented. Implementation of these upgrades will allow for operation in high-density sludge mode, reduced waste sludge volumes, and consistent compliance with discharge standards. Waste sludge will be disposed of in sludge disposal cells near the CTP as is the current practice. When the existing waste sludge cell reaches capacity, a new sludge disposal cell will be constructed.
LJ11-2	Adaptive management does not mean that EPA can change the Selected Remedy without meaningful public participation. In fact, if EPA determines in the future that significant or fundamental changes to the remedy are necessary, EPA is legally obligated by CERCLA to address these changes through an Explanation of Significant Differences or another ROD Amendment. Within the context of the Selected Remedy, adaptive management simply means that EPA will implement specific cleanup actions included in the remedy, monitor the effectiveness of those actions to determine whether cleanup goals are being achieved, and make adjustments to future cleanup actions to benefit from the information gained through

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	<p>the effectiveness monitoring. If these adjustments require significant or fundamental changes to the Selected Remedy, EPA will prepare a new appropriate decision document. In such circumstances, consistent with the requirements of Section 113(k) of CERCLA and 40 Code of Federal Regulations Section 300.435(c), EPA will provide opportunities for public participation. Depending on the significance of the changes in cleanup approach, there may be additional opportunities for public input.</p> <p>Adaptive management does not relieve EPA of its obligations under law and policy, or of its commitment to work with the affected communities.</p>
LJ27-8	<p>In 2002, Congress instructed EPA to ask the National Research Council (NRC) to conduct an independent evaluation of the Bunker Hill Superfund Site. The NRC established the Committee on Superfund Site Assessment and Remediation in the Coeur d’Alene Basin to evaluate the 2002 ROD for OU 3 (EPA, 2002; www.epa.gov/superfund/sites/rods/fulltext/r1002032.pdf) and supporting documents, and to examine EPA’s scientific and technical practices at the Site. NAS issued its resulting report in 2005 (National Academy of Sciences, 2005, http://www.epa.gov/superfund/accomp/coeur/).</p> <p>The report’s conclusions and recommendations cover the remedial investigation, human health risk assessment, and ecological risk assessment of the Coeur d’Alene Basin, and remediation objectives and approaches. Many of the recommendations relate to EPA’s approach to protection of the environment presented in the 2002 ROD for OU 3 and the 2001 Feasibility Study (FS) Report (EPA, October 2001, <i>Final [Revision 2] Feasibility Study Report, Coeur d’Alene Basin Remedial Investigation/Feasibility Study</i>). The NAS review validated much of the 2002 ROD for OU 3, and the recommendations for areas of improvement primarily focused on ecological protection. EPA carefully considered the NAS report and its recommendations, and conducted studies and evaluations to address the major recommendations. The results of those efforts are reflected in the actions identified in the Upper Basin Selected Remedy. EPA believes the Selected Remedy presented in the ROD Amendment addresses the NAS report’s recommendations, while recognizing EPA’s statutory obligations under CERCLA.</p> <p>Since the ROD for OU 3 was issued in 2002 and the NAS report in 2005, EPA has continued to collect environmental data and conduct additional studies throughout the Coeur d’Alene Basin, particularly in the Upper Basin. The additional data and studies have improved EPA’s understanding of the Upper Basin, and enabled EPA to address key NAS recommendations involving the fate and transport of dissolved metals in the subsurface; the role that groundwater plays in contaminant loading to surface water; approaches to groundwater treatment; the development of predictive tools to assess the effectiveness of remedial actions; evaluation of the SFCDR Watershed as a whole, including the Bunker Hill Box; and improving the use of the adaptive management approach.</p> <p>The Predictive Analysis (PA) is a tool that can be used to estimate how effective proposed remedial actions will be in relation to projected improvements to surface water quality. The PA was first developed to support the evaluation of alternatives in the 2001 FS Report. It was later used to support evaluations in the ROD for OU 3 and the Focused Feasibility Study (FFS) Report for the Upper Basin (EPA, 2012, <i>Final Focused Feasibility Study Report, Upper Basin of the Coeur d’Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site</i>). The Upper Basin covers a large geographic area, and predicting the potential effectiveness of hundreds of individual remedial actions across the entire Upper Basin is a significant challenge. The PA provided a means of addressing this challenge. Using the basic principle of mass balance (i.e., if 10 lb. of zinc are present at a site and 9 are removed, 1 lb. remains), the PA provided estimates of remedial effectiveness on an Upper-Basin-wide scale that could be used in comparing alternatives.</p> <p>The development of the PA (referred to as the Probabilistic Analysis at the time of the 2002 ROD for OU 3) was first documented in a 2001 technical memorandum (URS Greiner, September 2001, <i>Technical Memorandum [Revision 1]: Probabilistic Analysis of Post-Remediation Metal Loading</i>). The PA and associated documentation were reviewed as part of the NAS review (see Appendix F in National Academy of Sciences, 2005, http://www.epa.gov/superfund/accomp/coeur/). That review raised questions about the</p>

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	<p>methods and assumptions used to develop the PA. Following the NAS review, EPA sought an independent review of the PA by a well-known leader in the field of probabilistic modeling, Dr. Gregory B. Baecher, University of Maryland, A.J. Clark School of Engineering (College Park, MD). The purpose of Dr. Baecher’s review was to address questions raised by the NAS review.</p> <p>Dr. Baecher’s review validated EPA’s use of the PA in the evaluation and comparison of remedial alternatives. This review culminated in a second memorandum, <i>A Predictive Analysis of Post-Remediation Metals Loading</i> (EPA, 2007, http://yosemite.epa.gov/R10/CLEANUP.NSF/6ea33b02338c3a5e882567ca005d382f/97c56add3adf94678825755900771691/\$FILE/CDA%20Final%20Tech%20Memo.pdf), which provided clarification and additional documentation related to the PA. However, the fundamentals of the analysis have remained unchanged since it was first developed for the 2001 FS. The following is an excerpt from Dr. Baecher’s transmittal letter for the 2007 memorandum, which summarizes his findings related to the PA: “In my opinion, the Predictive Analysis strikes a reasonable balance between the needs of the Remedial Investigation and Feasibility Study to chart a course forward, and the difficulty of acquiring sufficient data on the basin from which to analyze conditions in a statistically exhaustive way. The approach taken by the Predictive Analysis is the traditional one of using professional judgment -- both engineering and scientific -- to form assumptions and to make estimates of parameter values, boundary conditions, and initial conditions. In my opinion, this is sound engineering practice.”</p>
LJ36-3	<p>Comprehensive flood control is a complex multi-jurisdictional issue that exceeds the expertise and regulatory authority of EPA’s CERCLA cleanup program. EPA has the responsibility to ensure the long-term protectiveness of CERCLA remedies, including addressing damage to existing remedies from major flooding. EPA understands that local communities are concerned about flood insurance requirements and development restrictions associated with updated Flood Insurance Rate Maps (FIRMs). EPA is therefore committed to working with local, state, and federal entities with an interest in SFCDR flood issues and, consistent with EPA’s authority, to help craft solutions. EPA can and will contribute to efforts to understand SFCDR flooding and, if these efforts identify necessary actions that will meet Superfund remedy requirements, EPA will define and select these activities in future decision documents. CERCLA requires that EPA’s contribution to flood control work must have a direct connection to the CERCLA remedy. The inclusion of remedy protection projects in the Upper Basin Selected Remedy is an example of EPA and IDEQ working with local communities to identify flood control projects directly tied to the existing Selected Human Health Remedies for OUs 1, 2, and 3.</p> <p>During site characterization and remedial design of remedy protection, source control, and water quality projects, EPA will continue to coordinate with local communities and flood control authorities, the Basin Commission, the U.S. Army Corp of Engineers, and the Federal Emergency Management Agency. This coordination will ensure that cleanup actions do not exacerbate flooding concerns along the SFCDR and Pine Creek, and to the extent possible will leverage future work by the various entities involved in SFCDR and Pine Creek activities. Where planning and logical work sequencing allow, EPA will work collaboratively with other entities performing flood control projects to coordinate the cleanup work in a manner that provides joint benefits.</p>
LJ39-5	<p>Under the Superfund law, EPA has a responsibility and the authority to take actions to protect human health and the environment. EPA’s decisionmaking process has been a careful, National Oil and Hazardous Substances Pollution Contingency Plan-consistent, and collaborative effort, which included input from state and local governments, tribes, other federal agencies, the Basin Commission, and the public. During the Focused Feasibility Study for the Upper Basin, EPA met regularly with the Basin Commission’s Upper Basin Project Focus Team, a group focused on technical issues related to cleanup and primarily composed of interested citizens and representatives from the State of Idaho, Shoshone County, the U.S. Bureau of Land Management, the U.S. Fish and Wildlife Service, the U.S. Forest Service, the Coeur d’Alene and Spokane</p>

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	<p>Tribes, and the State of Washington. Additional stakeholders participated in some of these meetings, including mining industry representatives. During the 135-day Proposed Plan comment period, some members of the Idaho State Legislature reviewed and submitted formal comments on the Proposed Plan.</p>
SA4-11	<p>EPA is required by CERCLA to carry out the cleanup to meet applicable or relevant and appropriate requirements (ARARs) unless these are waived. An ARAR can only be waived if the waiver results in a cleanup that is protective of human health and the environment. In the case of the Upper Basin cleanup, water quality standards have been identified as ARARs to protect aquatic life. “</p> <p>The ARARs for protection of the environment in the Upper Basin are the site-specific surface water quality standards for cadmium, lead, and zinc developed by the State of Idaho (Idaho Administrative Procedures Act [IDAPA] 58.01.02.285). The site-specific criteria for lead and zinc are higher than the federal and state-wide criteria for protection of aquatic life, although they have been demonstrated to provide a comparable level of protectiveness within the SFCDR Watershed. The site-specific cadmium criterion is lower than the federal and state criteria.</p> <p>As described in Sections 4.0 and 12.0 in Part 2 of the ROD Amendment, EPA has decided to reduce the scope of its Preferred Alternative (identified in the Proposed Plan) in the Upper Basin Selected Remedy. The Selected Remedy is an interim, not a final, remedy for the Upper Basin. The Selected Remedy will result in significant improvements to surface water quality in the Upper Basin and may achieve ambient water quality criteria (AWQC) ARARs under the Clean Water Act in many locations following periods of natural recovery; however, it may not achieve these ARARs in all locations.</p> <p>The Selected Remedy satisfies CERCLA’s protectiveness criteria as applied to an interim remedy. The level of protectiveness provided by an interim remedy is evaluated by the scope of its actions. Accordingly, the Selected Remedy, by its nature, need not be as protective as the final remedy is required to be under the statute. The level of protection that the Selected Remedy will provide is commensurate to the scope of the remedy, and the Selected Remedy will be adequately protective in the context of its scope, even though it does not, by itself, meet the statutory protectiveness standard that a final remedy would meet. Subsequent actions may need to be taken for the overall remedy for the Upper Basin to be considered final. Consistent with 40 Code of Federal Regulations (CFR) 300.430(a)(i)(B) and 40 CFR 300.430(f)(1)(ii)(C)(1), this interim remedy is neither inconsistent with nor precludes implementation of the final remedy that will be identified in the subsequent decision document(s).</p> <p>In EPA’s experience at complex sites such as the Upper Basin, it is reasonable to expect that considerable time will be necessary to achieve cleanup. Considerable uncertainty is associated with predicting cleanup times at such sites. For complex sites like these, EPA typically examines the magnitude and extent of contamination, selects and implements remedies, and then collects empirical data over time to assess the effectiveness of the remedies. EPA uses ecological response metrics and ongoing monitoring to assess aquatic life. If EPA determines that aquatic life is being protected by cleanup criteria higher than the water quality standards, an ARAR waiver can be proposed. Although it is possible that future data may indicate that ARAR waivers are appropriate in the Upper Basin, it is not appropriate to attempt to invoke them now before any substantive cleanup has taken place.</p> <p>Benefits to aquatic life will begin much sooner than when AWQC are finally met. As cleanup actions move forward, reducing metals concentrations, aquatic conditions will improve and benefits will accrue as concentrations drop further over time. Such benefits will occur much sooner with more aggressive cleanup actions. Although the results of early cleanup actions will likely not achieve AWQC or fully support aquatic life, the reduced dissolved metals concentrations will bring a substantial improvement to the health of the fisheries and the overall ecosystem. The populations and species diversity of fish and aquatic organisms will continue to improve as cleanup progresses in the Upper Basin.</p>

<p>SA4-12</p>	<p>The State of Idaho has legislated law concerning the use of water belonging to the state. The Idaho state water law is an applicable or relevant and appropriate requirement (ARAR) for the selected remedy. EPA will comply with the Idaho state water law as an ARAR and in accordance with CERCLA. As part of the Selected Remedy, groundwater will be collected from the Woodland Park area of Canyon Creek, and along the SFCDR near Osburn and in Kellogg (in the Bunker Hill Box). The groundwater collection in Kellogg will have no net impact on stream flows because the collected water will be treated and discharged at nearly the same location. Groundwater collected from Canyon Creek and Osburn will result in a minor reduction in stream flow in both Canyon Creek and the SFCDR between Wallace and Kellogg. As discussed in Section 3.7.3 of Part 2 of the ROD Amendment, the estimated reduction from these actions under even extreme low-flow conditions is minimal. For this reason, EPA does not anticipate that the groundwater collection and treatment actions will impact existing water rights holders.</p> <p>In Canyon Creek, the total volume of water that is associated with either water right licenses or statutory claims (surface water and groundwater) in the lower reach, where groundwater extraction would occur, is less than 2 cubic feet per second (cfs). During low-flow conditions, Canyon Creek flows at between 9 and 17 cfs. This means that between 80 and 90 percent of the stream flow remains unallocated (i.e., is not used to meet any water rights). In the case of Canyon Creek, “low-flow conditions” refer to the base flow that occurs in the fall dry season on the high end (17 cfs, as measured in 2006) and the 7Q10 flow on the low end (9 cfs), which represents the lowest 7-day average flow that occurs on average only once every 10 years. The estimated stream flow reduction for Canyon Creek due to groundwater collection under 7Q10 conditions is 10 percent. Because of this, water rights holders in Canyon Creek likely will not be impacted by the collection of contaminated groundwater under low-flow conditions.</p> <p>Similarly, in the SFCDR, 65 percent of the river flow is unallocated to water rights holders under 7Q10 conditions and 80 percent is unallocated under base-flow conditions. This, compared with the estimated reduction in river flow under low-flow conditions of 16 percent discussed above, indicates that water rights holders would not be impacted by the collection of contaminated groundwater and adit discharges under the Selected Remedy.</p> <p>The Idaho Department of Water of Resources (IDWR) has not approved the diversion of contaminated groundwater for treatment. EPA anticipates that withdrawal and treatment of contaminated water at the Central Treatment Plant (CTP) will be supported by IDWR. All withdrawn water will be returned to the South Fork after it is treated. The withdrawal and treatment will improve water quality and benefit aquatic life. In addition, EPA believes that withdrawal of contaminated water will not interfere with existing water rights that are downstream from the points of withdrawal but upstream of the CTP. Lastly, EPA intends to work with the IDWR to ensure that implementation of the groundwater treatment component of the Selected Remedy does not conflict with Idaho water law.</p>
<p>SA4-13</p>	<p>In response to comments, EPA has worked with Federal Natural Resource Trustees (such as U.S. Fish and Wildlife and U.S. Forest Service) and the Upper Basin Project Focus Team to develop “ecological response metrics.” Ecological response metrics are ways to measure ecological cleanup progress during the cleanup. The aquatic ecological response metrics are refined in part from the fishery tiers included in the 2002 ROD for OU 3 (EPA, 2002; www.epa.gov/superfund/sites/rods/fulltext/r1002032.pdf), and reflect the current understanding of the river system. Identification of measurable ecological response metrics provides EPA with a means to evaluate, predict, and report on environmental improvements associated with the Upper Basin cleanup. These metrics will inform EPA on the responses of environmental receptors following implementation of remedial actions. This information will provide EPA with the tools to measure the effectiveness of remedial actions and modify (or refine) future remedial approaches to ultimately meet remedial action objectives and cleanup levels. The metrics will give EPA and the public:</p> <ul style="list-style-type: none"> • Tools to estimate potential environmental and ecological improvements that could result from specific remedial actions; • Target receptors to evaluate environmental recovery; and • A means for measuring environmental recovery and progress toward cleanup goals following the implementation of remedial actions.