

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

PREPARED FOR: Bill Adams/EPA Region 10
Anne McCauley/EPA Region 10

PREPARED BY: Brian Tracy/CH2M HILL
Rebecca Maco/ CH2M HILL

DATE: August 2, 2012

1.0 Introduction

Alternative 3+(d) in the *Draft Focused Feasibility Study [FFS] Report, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site* (CH2MHILL, 2010) presented a suite of remedial actions that would be included in a final remedy for surface water and for soil, sediments, and source materials where actions are taken to protect human health and the environment in the Upper Basin. Implementation of Alternative 3+(d) for the Operable Unit 3 (OU 3) portion of the Upper Basin will present unique challenges given the nature and extent of the metals contamination in the Upper Basin, the number of remedial actions needed, and the size and complexity of the area. To address uncertainty during the management and implementation of the Selected Remedy that will be presented in the forthcoming Record of Decision (ROD) Amendment for the Upper Basin, the U.S. Environmental Protection Agency (EPA) identified the use of an adaptive management framework where information and understanding gained in the Upper Basin over time will be used to revise and guide the implementation of remedial actions to achieve cleanup goals. Consistent with the adaptive management framework and in response to comments received from stakeholders and the public on the *Proposed Plan, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site* (EPA, 2010a), EPA decided to select an interim remedy instead of a final remedy in the forthcoming Upper Basin ROD Amendment that focuses on addressing mining-related contamination in priority areas where data indicate the greatest risks to human health and the environment are present.

This Technical Memorandum (TM) presents the methodology used and results of an evaluation of Upper Basin mine and mill sites that were identified for remedial action in the Preferred Alternative as presented in the Proposed Plan (and were included in Alternative 3+(d) in the FFS Report), but which have been determined to be of lower priority and thus will not be included in the Selected Remedy to be documented in the forthcoming Upper Basin ROD Amendment. The purpose of the evaluation was to identify sites where, based on the operational and remedial history of the site as well as all available information regarding potential risks to human health and the environment resulting from mining-related contamination, EPA has decided not to take action at this time.

2.0 Background

The Proposed Plan (EPA, 2010a) presented the Preferred Alternative for a comprehensive remedy for the Upper Basin which addressed historical mining-related contamination. The Preferred Alternative included remedial actions at 345 mine and mill sites¹ located in the Upper Basin that would be required to meet cleanup goals based on available data and predictions of the effectiveness of the cleanup. The remedial actions at these mine and mill sites did not include the groundwater treatment actions identified for the Bunker Hill Box and referred to as Operable Unit 2 (OU 2) Alternative (d) in the Proposed Plan. EPA is retaining OU 2 Alternative (d) for inclusion in the Selected Remedy.

Following the conclusion of the Proposed Plan comment period, EPA worked with the Upper Basin Project Focus Team (PFT) to categorize mine and mill sites included in the Preferred Alternative based on available analytical data, field observations, historical information, current status, and other site knowledge. This categorization of sites was conducted as a first step towards implementation planning and in response to community and stakeholder comments requesting more description of how the Preferred Alternative would be implemented and where the focus areas would be in the near term. Mine and mill sites were subsequently categorized into the following categories:

Strong Consensus Sites – Mine and mill sites where available information confirmed substantial risks to human health and the environment from mining-related contamination requiring remedial action.

Active Sites – Mine and mill sites where active industrial and/or commercial activities are currently occurring. At some of these sites, access controls and/or Institutional Controls Program (ICP) protective barriers are in place that prevent or minimize direct contact with source materials. In addition to the presence of in-place measures to reduce direct contact risks, the active mine and mill sites are typically overseen by regulatory agencies outside the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Therefore, regulatory methods both within and outside CERCLA are available to address the potential release of contaminants that may pose a risk to human health and the environment.

Remediated Sites – Over time, cleanup actions have been conducted by EPA, other agencies, and property owners within the Upper Basin. The majority of actions that have been taken at these mine and mill sites focused on human health risks but, where appropriate, additional actions were taken to reduce contamination at the sites and the transport of contamination downstream from these sites. Currently, sites where cleanup actions have been taken are being monitored to determine their effectiveness towards meeting remedial action objectives. Review of the monitoring results and the protectiveness of these clean up actions is documented in Five-Year Reviews consistent with CERCLA and the 2002 ROD for OU 3 (EPA, 2002). Potential shortcomings of these clean up actions in achieving remedial action objectives and protection of human health and the environment

¹ The Proposed Plan (EPA, 2010a) stated that the Preferred Remedial Alternative for OU 3 (Alternative 3+(d)) included 348 mine and mill sites. This total erroneously included three sites in Canyon Creek (WAL007, WAL008, and WAL012) that were in Alternative 4+ but not in Alternative 3+. Therefore, the correct number of mine and mill sites in the Preferred Remedial Alternative should have been 345.

will be addressed as part of the Five-Year Review process or through the adaptive management process.

Contingent Sites – Mine and mill sites where limited information is available regarding the potential risks to human health and the environment. EPA has worked with stakeholders and the Upper Basin PFT to gather available information for these sites, including the results of a field effort conducted in 2011 to obtain additional information at some of the sites and potentially remove them from the Selected Remedy to be included in the forthcoming ROD Amendment. The 42 mine and mill sites shown in Table 1² were removed from the Selected Remedy based on the results of the 2011 focused characterization sampling (CH2M HILL, 2012).

In consideration of comments received on the Proposed Plan from the community and stakeholders, EPA has reduced the scope of the Selected Remedy and is not including all of the remedial actions that were presented in the Preferred Alternative in the Proposed Plan. Therefore, the Selected Remedy is not expected to fully address surface water contamination at all locations in the Upper Basin, and thus is an interim remedy for the Upper Basin. The Selected Remedy is also not intended to fully address groundwater contamination. However, the remedial actions included in the Selected Remedy are expected to result in the achievement of cleanup goals for soil and sediments where actions are taken. The Selected Remedy will address many significant sources of contamination in the Upper Basin and will significantly contribute to meeting remedial action objectives, thus supporting a final protective remedy for the Upper Basin.

The reduction in scope of the Selected Remedy from a final to an interim remedy resulted in a need to determine which mine and mill sites will be retained in the Selected Remedy and which sites will be removed. Both active facilities (Table 2) and mine and mill sites where clean up actions have been conducted (Table 3) will be removed from the Selected Remedy. As noted above, there are other regulatory approaches that can be used to address future issues at these sites, should they occur. In addition, EPA has reviewed mine and mill sites that were previously categorized as contingent sites to determine whether additional sites may be removed. Removal of mine and mill sites from the Selected Remedy is based on lines of evidence that suggest that the potential risk to human health and the environment is relatively low. This will allow the Selected Remedy that will be presented in the forthcoming ROD Amendment to focus on sites with the greatest risks to human health and the environment in the Upper Basin.

3.0 Contingent Mine and Mill Site Evaluation

Mine and mill sites included in the Preferred Alternative presented in the Proposed Plan that were later categorized as contingent sites were evaluated to assess the potential risks to human health and the environment posed by mining-related contamination.

The initial evaluation of mine and mill sites included review of available site-specific contaminant concentration data for each contingent site. If available data indicated that lead concentrations were less than 530 milligrams per kilogram (mg/kg) in soil, sediments, and

² The tables referenced in this TM are provided following Section 5.0, References.

source materials³ and/or site-specific surface water concentrations were equal to or less than the ambient water quality criteria (AWQC), the sites were identified for removal from the Selected Remedy. Sites where soil, sediment, or source material lead concentrations exceeded 530 mg/kg or site-specific surface water contaminant concentrations were greater than the AWQC were retained for inclusion in the Selected Remedy.

Following the evaluation of site-specific data, available human health exposure information regarding the sites was evaluated. Aerial maps and information gathered during the focused characterization sampling of mine and mill sites (CH2MHILL, 2012) were evaluated to assess the potential risk of exposure to humans by contact with potentially contaminated materials at each site. Information used to evaluate the potential human health exposure risk at each site included the proximity of the site to residences or residential areas, access to the site, recreational use observed at the site during field visits, mine waste types present at the site, and contaminant concentrations measured. Mine and mill sites were then assigned a human health risk level of none, low, moderate, or high based on the human health risk observations identified above. All sites with a human health risk level of high were retained for inclusion in the Selected Remedy as additional data collection and verification will be needed to ensure that these sites do not pose a significant risk to human health.

Mine and mill sites with human health risk levels of none, low, and moderate or with no human health risk information were then evaluated using the following screening criteria:

Erosion Potential – During field investigations in the Upper Basin, evidence of erosion has been noted by field teams. In addition, information regarding erosion of mine wastes at some sites was provided by review of Idaho Geological Survey (IGS) reports as well as information provided by Upper Basin PFT members based on their personal knowledge. Mine and mill sites where erosion information was available were assigned an erosion potential description of no erosion potential, minimal erosion potential, moderate erosion potential, or high erosion potential. Sites with lower erosion potential were given priority for potential removal from the Selected Remedy.

Riparian Acreage – The U.S. Department of the Interior Bureau of Land Management (BLM) developed the original estimated areal extents for the mine and mill sites located within the Upper Basin using field reconnaissance notes and aerial maps from the 1990s. In addition, BLM estimated the areal extent of riparian areas, floodplains, and stream channels in the general vicinity of mine and mill sites in the Upper Basin. BLM overlaid the maps of areal extent of mine and mill sites and riparian areas to provide a rough estimate of the acreage of riparian, floodplain, and stream channel areas that were contained within mine and mill sites in the Upper Basin. The acreage of riparian, floodplain, and stream channel area located within a site was used as an indicator of the relative potential impact that the site may be having on these habitat areas. Sites with no or minimal riparian acreage were given priority for potential removal from the Selected Remedy.

Downstream Water Quality – With the exception of Canyon and Ninemile Creeks and OU 2, minimal site-specific water quality data are available for the majority of mine and mill sites located in the Upper Basin. For smaller side tributaries to the South Fork Coeur

³ The evaluation of contingent mine and mill sites focused on lead in soil, sediments, and source materials because data for lead are the most widely available.

d'Alene River (SFCDR), water quality information is limited to a small number of samples (typically 1 to 5 samples collected between 1997 and 2008) obtained from the mouth of each tributary prior to entering the SFCDR. For the purposes of this evaluation, available site-specific and downstream water quality data were evaluated with respect to AWQC to assess the potential impacts that upstream sites may be having on downstream water quality. Sites with downstream AWQC ratios equal to or below 1.0 were given priority for potential removal from the Selected Remedy.

Location Within Watershed – A number of mine and mill sites identified for cleanup in the Preferred Alternative are located in the upper reaches of watersheds and are not in close proximity to riparian, floodplain, or stream channel areas. The location of each site within its respective watershed and available downstream water quality data were evaluated to assess the potential impact of a site on downstream water quality. Sites located in the upper reaches of the watershed with downstream AWQC ratios equal to or below 1.0 were given priority for potential removal from the Selected Remedy.

Volume of Waste Materials – Initial volumes and types of mine waste materials present at a site were estimated during development of the Preferred Alternative. Mine and mill sites estimated to have relatively small volumes of waste materials (typically 200 cubic yards or less) or relatively low-concentration mine wastes (e.g., upland waste rock) were identified. The locations of these sites within their respective watersheds and downstream water quality data were used to evaluate the potential for risk to human health and the environment from these sources.

The screening of mine and mill sites using the above criteria focused on identifying those sites with the lowest potential to present a significant risk to human health and the environment. In general, sites identified for removal from the Selected Remedy exhibited one or all of the following characteristics:

- Minimal or no documented erosion of source materials
- Minimal or no riparian, floodplain, or stream channel areas within the site footprint
- Downstream water quality measurements near or below the AWQC for dissolved zinc
- Location in an upstream area of the watershed
- Small volumes of relatively low-concentration mine wastes

Table 4 lists the 114 sites that met one or more of the above screening criteria and can therefore be considered for removal from the Selected Remedy. Table 4 also presents the associated lines of evidence that were available to support exclusion of these sites from the Selected Remedy.

4.0 Summary

A total of 200 mine and mill sites originally included in Alternative 3+(d) in the Draft Final FFS Report (CH2M HILL, 2010) and in the Preferred Alternative presented in the Proposed Plan (EPA, 2010a) will not be included in the Selected Remedy to be documented in the forthcoming Upper Basin ROD Amendment, based on the designation of the mine and mill

sites as active facilities (19 sites, as indicated in Table 2), prior cleanup actions that have been conducted at sites (25 sites, as indicated in Table 3), and available lines of evidence suggesting minimal potential risks to human health and the environment (42 and 114 sites as indicated in Tables 1 and 4, respectively). The locations of active, remediated, and contingent sites removed from the Selected Remedy along with sites retained for inclusion in the Selected Remedy (Table 5) are shown in Figures 1 through 4.⁴

While the mine and mill sites listed in Tables 1 through 4 are not included in the Selected Remedy, it should not be inferred that they do not pose a risk to human health and the environment. EPA plans to continue to collect additional field data at these sites to determine whether the sites need to be addressed by remedial actions in the future. Any sites with potential impacts to human health (e.g., because of proximity to remediated yards) will be priorities for collecting additional field data. These activities will include evaluating field data using screening criteria consistent with field efforts conducted in 2011 and as documented in the TM *Upper Coeur d'Alene Basin 2011 Focused Characterization Sampling: Results from Selected Mine and Mill Sites* (CH2M HILL, 2012).

As cleanup actions proceed in the Upper Basin and more information becomes available either through work in specific areas or through ongoing site characterization efforts, it may be necessary to evaluate some of these sites for inclusion in another decision document. In addition, as cleanup proceeds and more information becomes available, sites that have not yet been identified may be discovered that pose a risk to human health and the environment and may need to be included in another decision document.

5.0 References

CH2M HILL. July 2010. *Draft Final Focused Feasibility Study Report, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site*. Prepared for U.S. Environmental Protection Agency Region 10.

CH2M HILL. May 25, 2012. *Technical Memorandum: Upper Coeur d'Alene Basin 2011 Focused Characterization Sampling: Results from Selected Mine and Mill Sites*. Prepared for U.S. Environmental Protection Agency Region 10.

U. S. Environmental Protection Agency (EPA). September 12, 2002. *Record of Decision: The Bunker Hill Mining and Metallurgical Complex Operable Unit 3*.

U. S. Environmental Protection Agency (EPA). July 12, 2010 (2010a). *Proposed Plan, Upper Basin of the Coeur d'Alene River, Bunker Hill Mining and Metallurgical Complex Superfund Site*.

U. S. Environmental Protection Agency (EPA). November 2010 (2010b). *Five-Year Review Report: 2010 Five-Year Review for the Bunker Hill Mining and Metallurgical Complex Superfund Site Operable Units 1, 2, and 3, Idaho and Washington*.

⁴ These figures are provided at the end of this TM, following the tables.

Tables

TABLE 1

Summary of Mine and Mill Sites Not Retained in the Selected Remedy After 2011 Focused Characterization Sampling
Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|-----------------|---------------------------------|----------------|
| POL066 | UNNAMED ADIT | Big Creek |
| BUR089 | IDAHO AND EASTERN MINE | Canyon Creek |
| BUR132 | GERTIE MINE | Canyon Creek |
| BUR133 | RUSSEL MINE | Canyon Creek |
| BUR166 | UNNAMED ADIT | Canyon Creek |
| BUR187 | UNNAMED ADIT | Canyon Creek |
| THO023 | UNNAMED ADIT | Canyon Creek |
| KLE008 | MAINE-STANDARD MINE | Moon Creek |
| KLE063 | UNNAMED ADIT | Moon Creek |
| KLE065 | UNNAMED ADITS | Moon Creek |
| BUR052 | LITTLE SUNSET MINE | Ninemile Creek |
| OSB032 | DULUTH MINE BLACKCLOUD CK | Ninemile Creek |
| OSB033 | RUTH MINE | Ninemile Creek |
| OSB084 | BLACKCLOUD CK IMPACTED RIPARIAN | Ninemile Creek |
| OSB085 | BLACKCLOUD CK IMPACTED RIPARIAN | Ninemile Creek |
| WAL006 | NORTHSIDE MINE | Ninemile Creek |
| MAS053 | UNNAMED ADITS | Pine Creek |
| TWI002 | PALISADE MINE LOWER WORKINGS | Pine Creek |
| TWI008 | WEST PINE CREEK DEPOSIT | Pine Creek |
| TWI009 | EQUITABLE PROSPECT | Pine Creek |
| TWI011 | UNNAMED ADIT | Pine Creek |
| TWI013 | BLUEBIRD PROSPECT (HANNIBAL) | Pine Creek |
| TWI018 | UNNAMED PROSPECT | Pine Creek |
| TWI020 | UNNAMED ADIT | Pine Creek |
| TWI029 | UNNAMED ADIT | Pine Creek |
| KLE023 | PIONEER MINES INC. PROPERTY | SFCDR (West) |
| KLE070 | UNNAMED ADIT | SFCDR (West) |
| MUL004 | UNITED LEAD ZINC MINE | SFCDR (East) |
| MUL007 | WONDER MINE | SFCDR (East) |
| OSB030 | SILVERTON PROSPECT UPPER ADIT | SFCDR (West) |
| OSB073 | SILVERTON PROSPECT LOWER ADIT | SFCDR (West) |
| OSB075 | UNNAMED ADIT | SFCDR (West) |
| WAL024 | WAR EAGLE MINE | SFCDR (West) |
| WAL046 | DAY MINES CLAIMS | SFCDR (West) |
| WAL055 | UNNAMED ADIT | SFCDR (West) |
| WAL056 | PEERLESS GROUP (OSCEOLA) | SFCDR (West) |
| WAL057 | PEERLESS GROUP | SFCDR (West) |
| WAL058 | UNNAMED ADIT | SFCDR (West) |
| WAL062 | UNNAMED ADIT | SFCDR (West) |
| WAL064 | UNNAMED ADIT | SFCDR (West) |
| WAL072 | UNNAMED ADIT | SFCDR (West) |
| WAL073 | UNNAMED ADIT | SFCDR (West) |

Notes:

See *Technical Memorandum: Upper Coeur d'Alene Basin 2011 Focused Characterization Sampling: Results from Selected Mine and Mill Sites* (CH2M HILL, 2012) for additional details.

BLM = U.S. Department of the Interior Bureau of Land Management
 SFCDR = South Fork Coeur d'Alene River

TABLE 2

Active Mine and Mill Sites

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|------------------------|--------------------------------------|---|
| KLE025 | Sunshine Tailings Pond No. 2 | Big Creek |
| KLE026 | Silver Syndicate | Big Creek |
| KLE027 | North American Mine | Big Creek |
| KLE053 | North American/Silver Syndicate Mine | Big Creek |
| KLE054 | Crescent/Hooper Tunnel | Big Creek |
| LOK008 | Idaho Silver No. 2 | SFCDR Tributary (Daisy Gulch, SF-206) |
| MUL042 | Gold Hunter No. 5 | SFCDR Tributary (Gold Hunter Gulch, SF-212) |
| KLE075 | Silver Summit Millsite (Polaris) | SFCDR (West) |
| LOK050 | Daisy Gulch Tailings Pond | SFCDR (East) |
| LOK051 | Daisy Gulch Old Landfill | SFCDR (East) |
| MUL019 | Morning No. 6 | SFCDR (East) |
| MUL020 | Lucky Friday No. 3 | SFCDR (East) |
| MUL037 | Lucky Friday Tailings Pond No. 2 | SFCDR (East) |
| MUL038 | Gold Hunter No. 6 | SFCDR (East) |
| MUL058 | Lucky Friday Tailings Pond No. 1 | SFCDR (East) |
| MUL131 | National Millsite | SFCDR (East) |
| OSB119 | Osburn Zanetti Gravel Operation | SFCDR (West) |
| WAL001 | Osburn Tailings Ponds | SFCDR (West) |
| WAL020 | Caladay Mine | SFCDR (West) |

Notes:

Active sites are defined as mine and mill sites where active industrial and/or commercial activities are currently occurring. At some of these sites, access controls and/or Institutional Controls Program (ICP) protective barriers are in place that prevent or minimize direct contact with source materials.

BLM = U.S. Department of the Interior Bureau of Land Management

SFCDR = South Fork Coeur d'Alene River

TABLE 3
Remediated Mine and Mill Sites
Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed | Comments and Documentation for Remedial Action |
|--------------------------------|-----------------------------------|--------------------------------------|---|
| WAL036 | Lake Cr Imp Riparian | SFCDR Tributary (Lake Creek, SF-238) | Identified for remediation by Yards Program 2012-2013 |
| BUR054 | Rex No. 2/Sixteen-to-One Mine | Ninemile Creek | Currently monitored under the remedial action effectiveness program. Remedial actions were conducted in 2006-2007 and included: removal of onsite debris, realignment of Rex Creek channel and lining with rip-rap, consolidation of source materials onsite and capping with clean materials, regrading of surface to promote surface water runoff and help new vegetation grow, and construction of a toe buttress to strengthen the tailings pile. |
| OSB061 | Blackcloud Ck Millsite | Ninemile Creek | Site was largely capped by the yard cleanup program. Currently the capped site is occupied by a residence. |
| KLW077 | General Mine | Pine Creek | Remediated as part of Clean Water Act grant work in Little Pine Creek. |
| KLW080 | Bobby Anderson Mine | Pine Creek | Portion of rock dump addressed by road right-of-way remediation |
| MAS008 | Nabob 600 Level (Crystalite) | Pine Creek | BLM conducted remediation consisting of reclaiming/ revegetating the rock dump. |
| MAS017 | Sidney (Denver) 500 Level | Pine Creek | Sidney Mining and the State of Idaho conducted remediation and stabilization on the lower portion of the working along the creek. BLM conducted limited removal of waste materials. |
| MAS018 | Denver Mine (Nabob Adit) | Pine Creek | BLM conducted stream work at bottom of site, and installed a cutoff wall to prevent creek from entering Sidney shaft. The waste pile dumps were not included in these remedial actions. |
| MAS019 | Star Antimony Lower Adit | Pine Creek | BLM conducted remedial actions consisting of regrading and revegetation. |
| MAS027, MAS048, MAS049, MAS050 | Constitution Mine and Millsite | Pine Creek | Currently monitored under the remedial action effectiveness program. Remedial actions were conducted in 2006 and included: relocation and consolidation of source materials from the lower segment to the upper segment, stabilization with hydro-seeding, and revegetation. In addition, surface water controls were installed to control onsite runoff and minimize sediment transport from erosion to East Fork Pine Creek. |
| MAS072 | Unnamed Adit | Pine Creek | BLM conducted rock dump revegetation and installed a mine discharge pilot water treatment system, which indicated that the adit had high iron and low zinc concentrations. |
| MAS079 | Highland Surprise Lower Rock Dump | Pine Creek | Remedial actions consisting of regrading/ revegetation, and stream armoring were conducted by BLM. |
| MAS081 | Sidney (Red Cloud) Rock Dump | Pine Creek | BLM conducted regrading and recontouring and creek realignment. |
| MAS006 | Nabob Tailings Pile | Pine Creek | BLM actions at the millsite primarily consisted of improving mine safety operations, installing a groundwater drain, and capping of tailings. |
| KLE042 | Moon Ck Pond at Mouth | SFCDR (West) | Remediated under the Institutional Controls Program. |
| KLE062 | Osburn Flats USBM Test Plots | SFCDR (West) | Detailed design of the remedial action is complete, and the project either has been conducted recently or is scheduled for the near future. |
| KLE074 | CDA Mill Site | SFCDR (West) | The CDA Mine and Mill Site were remediated in 2001, and the remedies are functioning as intended according to the 2010 Five-Year Review Report (U.S. Environmental Protection Agency [EPA], 2010b). |
| MUL001, MUL002 | Golconda Mine and Millsite | SFCDR (East) | Currently monitored under the remedial action effectiveness program. Remedial actions were conducted in 2006-2007 and included: design and construction of a water diversion structure to route water through pipes from the site and mine adit (away from existing tailings) to the SFCDR, removal of source materials to an upland area (which was capped and stabilized), and armoring the base of the waste pile along the SFCDR. |
| POL018 | Merger Mine | SFCDR (West) | Work completed by CDA Mines. |
| POL019 | CDA Mine | SFCDR (West) | The CDA Mine and Mill Site were remediated in 2001, and the remedies are functioning as intended according to the 2010 Five-Year Review Report (EPA, 2010b). |
| WAL037 | Hercules Millsite | SFCDR (West) | Remediated, part of Wallace Yard project. |

Notes:

Remediated sites are defined as sites where cleanup actions have been taken or are being monitored to determine their effectiveness in meeting remedial action objectives

BLM = U.S. Department of the Interior Bureau of Land Management

SFCDR = South Fork Coeur d'Alene River

USBM = U.S. Bureau of Mines

TABLE 4

Contingent Mine and Mill Sites for Removal from Selected Remedy

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed | Human Health Exposure Criteria ¹ | Erosion Potential Criteria ² | Riparian Acreage | Riparian Acreage Criteria ³ | AWQC at the Downstream Segment | Downstream Water Quality Criteria ⁴ | Location Within Watershed Criteria ⁵ | Volume of Waste Materials (cy) | Volume of Waste Materials Criteria ⁶ | Additional Site-Specific Information ⁷ | Notes |
|-----------------|--------------------------------------|-----------------------|---|---|------------------|--|--------------------------------|--|---|--------------------------------|---|---|--|
| POL001 | Sunshine Consolidated Rockford Group | Big Creek (BC-260) | -- | -- | 0 | X | 0.060 | X | X | 8,160 | | X | Waste pile sample indicated low levels of cadmium (1.5 mg/kg). Water quality data from adit indicate that the discharge is below the AWQC. Site has no riparian acreage, AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream, and site is located high up in the watershed. |
| POL002 | Silver Dale & Big Hill Mine | Big Creek (BC-260) | -- | -- | 0.68 | X | 0.060 | X | X | 1,700 | | | Site is located in the communities of Big Creek and Sunshine drinking water source areas. Site contains 0.68 acre of riparian habitat, and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. |
| POL008 | Globe Mine | Big Creek (BC-260) | -- | -- | 0.34 | X | 0.060 | X | | 8,160 | | | Site has limited riparian habitat (0.34 acre) and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. |
| POL010 | Western Star Mine | Big Creek (BC-260) | -- | -- | 0.19 | X | 0.060 | X | | 4,560 | | | Site has limited riparian area (0.19 acre), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. |
| POL011 | Wolfson Mine | Big Creek (BC-260) | -- | -- | 0.13 | X | 0.060 | X | X | 3,120 | | | Site has limited riparian area (0.13 acre), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. In addition, site is located far up in the watershed. |
| POL022 | First National Mine | Big Creek (BC-260) | -- | -- | 0.85 | X | 0.060 | X | X | 4,600 | | X | IGS collected waste dump and adit samples (arsenic 210 mg/kg, cadmium 2.2 mg/kg, and copper 26 mg/kg). Adit discharge was below AWQC. Site has limited riparian area (0.85 acre), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. |
| POL044 | Unnamed Prospect | Big Creek (BC-260) | -- | -- | 0.30 | X | 0.060 | X | X | 200 | X | | Site has limited riparian area (0.30 acre), low waste volume (200 cy), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. In addition, site is located far up in the watershed. |
| POL052 | Lucky Boy Mine | Big Creek (BC-260) | -- | -- | 0.14 | X | 0.060 | X | | 4,600 | | X | IGS sampled the waste dump. Lead concentrations were low (120 mg/kg). Site has limited riparian area (0.14 acre), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. |
| POL067 | Unnamed Adit | Big Creek (BC-260) | -- | -- | 0 | X | 0.060 | X | | 0 | X | X | TCD has a passive treatment component. The adit discharge has low dissolved zinc concentrations (<0.01 mg/L). Site has no riparian area, low waste volume, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| POL068 | Unnamed Adit | Big Creek (BC-260) | -- | -- | 0.20 | X | 0.060 | X | X | 200 | X | | Site has limited riparian area (0.20 acre), low waste volume (200 cy), and AWQC exceedance ratio for dissolved zinc is less than 1.0 downstream. In addition, site is located far up in the watershed. |
| BUR066 | Moonlight Mine | Canyon Creek (CC-282) | X | X | 0.30 | X | 10.2 | | | 7,000 | | | Site has low risk of human exposure, no observed erosion potential, and limited riparian area (0.3 acre). |
| BUR068 | Headlight Mine | Canyon Creek (CC-282) | X | X | 0 | X | 10.2 | | X | 12,000 | | | Site has no risk of human exposure, moderate erosion potential, no riparian area, and is located high up in the watershed. |
| BUR105 | Oom Paul No. 2 | Canyon Creek (CC-290) | X | X | 0.27 | X | 0.110 | X | X | 6,500 | | | Site has a low risk of human exposure, no observed erosion potential, minimal riparian area (0.27 acre), is located high up in the watershed, and the downstream dissolved zinc AWQC exceedance ratio is less than 1.0. |
| BUR125 | Midway Summit Mine | Canyon Creek (CC-503) | -- | -- | 0 | | 3.06 | | X | 8,000 | | | Site contains no riparian area and is located high up in the watershed. |
| BUR134 | Alcides Prospect & Imperial Mine | Canyon Creek (CC-290) | -- | -- | 0 | X | 0.110 | X | X | 14,400 | | | Site contains no riparian area and is located high up in the watershed, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| BUR135 | Sonora Mine | Canyon Creek (CC-290) | -- | -- | 0.58 | X | 0.110 | X | | 200 | X | | Site has a small waste volume (200 cy), limited riparian area (0.58 acre), is located high up in the watershed, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| BUR176 | Unnamed Adit | Canyon Creek (CC-503) | -- | -- | 0.56 | X | 3.06 | | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.56 acre). |
| BUR185 | West Mammoth Mine | Canyon Creek (CC-290) | -- | -- | 0.31 | X | 0.110 | X | X | 200 | X | | Site has a small waste volume (200 cy), limited riparian area (0.31 acre), is located high up in the watershed, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| BUR189 | Duluth Mine Canyon Ck | Canyon Creek (CC-503) | -- | -- | 0 | X | 3.06 | | X | 200 | X | | Site has a small waste volume (200 cy) and no riparian area, and is located high up in the watershed. |
| BUR204 | Unnamed Rock Dump | Canyon Creek (CC-503) | -- | -- | 0.19 | X | 3.06 | | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.19 acre), and is located high up in the watershed. |
| BUR088 | Ajax No. 2 | Canyon Creek (CC-392) | -- | -- | 0 | X | 1.54 | X | | 0 | | | Proposed remedial action includes an active treatment component, although no water quality data from the adit discharge are available. The site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.6. |
| BUR099 | Benton Mine | Canyon Creek (CC-392) | -- | -- | 0 | X | 1.54 | X | | 0 | | | Proposed remedial action includes an active treatment component, although no water quality data from the adit discharge is available. The site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.6. |
| KLE061 | Unnamed Tunnel | Moon Creek (MC-262) | -- | -- | 0.10 | X | 1.35 | X | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.1 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.5. |
| KLE064 | Unnamed Adit | Moon Creek (MC-262) | -- | -- | 0.10 | X | 1.35 | X | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.1 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.5. |
| KLW083 | Liberal King Part of Tunnel No. 2 | Pine Creek (PC-313) | -- | -- | 0.58 | | 1.68 | | X | 13,920 | | | Site has limited riparian area (0.58 acre) and is located high up in the watershed. |
| MAS009 | Shetland Mining Co/Nabob Silver-Lead | Pine Creek (PC-312) | -- | -- | 0.31 | X | 5.75 | | X | 7,440 | | | Site has limited riparian area (0.31 acre) and is located high up in the watershed. |
| MAS023 | Blue Eagle Mine | Pine Creek (PC-312) | -- | -- | 0.35 | | 5.75 | | X | 1000 | | | Site has limited riparian area (0.35 acre) and is located high up in the watershed. |
| MAS028 | Lon Cheney Group | Pine Creek (PC-312) | -- | -- | 0.45 | X | 5.75 | | X | 10,800 | | | Site has limited riparian area (0.45 acre) and is located high up in the watershed. |
| MAS030 | Trapper Creek Silver | Pine Creek (PC-312) | -- | -- | 0.28 | X | 5.75 | | X | 6,720 | | | Site has limited riparian area (0.28 acre) and is located high up in the watershed. |
| MAS031 | Trapper Mining & Smelting | Pine Creek (PC-312) | -- | -- | 0.18 | X | 5.75 | | X | 4,320 | | | Site has limited riparian area (0.18 acre) and is located high up in the watershed. |
| MAS032 | L&J Prospect | Pine Creek (PC-312) | -- | -- | 0.27 | X | 5.75 | | X | 80 | X | | Site has limited riparian area (0.27 acre) and low waste volume (80 cy), and is located high up in the watershed. |
| MAS033 | CDA Premiere | Pine Creek (PC-312) | -- | -- | 0.20 | X | 5.75 | | X | 4,800 | | | Site has limited riparian area (0.20 acre) and is located high up in the watershed. |
| MAS052 | Owl/Fred Mine | Pine Creek (PC-312) | -- | -- | 0.22 | X | 5.75 | | X | 5,280 | | | Site has limited riparian area (0.22 acre) and is located high up in the watershed. |
| MAS055 | Unnamed Adit | Pine Creek (PC-312) | -- | -- | 0 | X | 5.75 | | X | 200 | X | | Site has no riparian area and a small waste volume (200 cy), and is located high up in the watershed. |
| MAS057 | Unnamed Adit | Pine Creek (PC-312) | -- | -- | 0.17 | X | 5.75 | | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.17 acre), and is located high up in the watershed. |
| MAS065 | Unnamed Prospect | Pine Creek (PC-312) | -- | -- | 0.20 | X | 5.75 | | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.20 acre), and is located high up in the watershed. |
| MAS068 | Unnamed Adit | Pine Creek (PC-312) | -- | -- | 0.16 | X | 5.75 | | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.16 acre). |

TABLE 4
Contingent Mine and Mill Sites for Removal from Selected Remedy
Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed | Human Health Exposure Criteria ¹ | Erosion Potential Criteria ² | Riparian Acreage | Riparian Acreage Criteria ³ | AWQC at the Downstream Segment | Downstream Water Quality Criteria ⁴ | Location Within Watershed Criteria ⁵ | Volume of Waste Materials (cy) | Volume of Waste Materials Criteria ⁶ | Additional Site-Specific Information ⁷ | Notes |
|-----------------|----------------------------|--|---|---|------------------|--|--------------------------------|--|---|--------------------------------|---|---|--|
| TWI006 | Manhattan Mine | Pine Creek (PC-311) | -- | -- | 0 | X | 0.0657 | X | | 4,800 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| TWI012 | KC Prospect | Pine Creek (PC-311) | -- | -- | 0.16 | X | 0.0657 | X | | 3,840 | | | Site has limited riparian area (0.16 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| TWI014 | Great Dunkard Mine | Pine Creek (PC-311) | -- | -- | 0.25 | X | 0.0657 | X | X | 6,000 | | | Site has limited riparian area (0.25 acre), is located high up in the watershed, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| TWI027 | Unnamed Prospect | Pine Creek (PC-311) | -- | -- | 0 | X | 0.0657 | X | | 200 | X | | Site has no riparian area and low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| TWI030 | Unnamed Adit | Pine Creek (PC-311) | -- | -- | 0 | X | 0.0657 | X | | 200 | X | | Site has no riparian area and low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| KLE016 | Syndicate Mining | SFCDR (West) | -- | -- | 0.62 | X | 8.70 | | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.62 acre). |
| KLE020 | New Hilarity Mine | SFCDR (West) | -- | -- | 0 | X | 8.70 | | X | 36,000 | | | Site has no riparian area and is located far up in the watershed. |
| KLE021 | Alhambra Mine | SFCDR (West) | -- | -- | 0 | X | 8.70 | | X | 200 | X | | Site has no riparian area and is located far up in the watershed. |
| KLE051 | Florence Mine | SFCDR (West) | -- | -- | 0 | X | 8.70 | | X | 200 | X | | Site has no riparian area and is located far up in the watershed. |
| MUL063 | Gem State Mine | SFCDR (East) (SF-228) | X | X | 0 | X | 1.41 | | | 5,040 | | | Site has moderate risk for human exposure, no observed erosion potential, and no riparian area. |
| MUL065 | Moe Mine | SFCDR (East) (SF-228) | X | X | 0 | X | 1.41 | X | | 7,440 | | | Site has moderate risk for human exposure, no observed erosion potential, and no riparian area. |
| POL021 | Eclipse Mine | SFCDR (West) (SF-268) | -- | -- | 0.66 | X | 8.70 | | X | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.66 acre), and is located far up in the watershed. |
| POL064 | Unnamed Adit | SFCDR (West) (SF-268) | -- | -- | 0 | X | 8.70 | | X | 200 | X | | Site has small waste volume (200 cy) and no riparian area, and is located far up in the watershed. |
| WAL035 | Osborn Rockpit Along I-90 | SFCDR (West) | X | X | 4.79 | | 8.70 | | | 140,000 | | | The rock pit was not a developed mineral site, there is no risk of human exposure, and there is low potential for erosion. |
| WAL016 | Argentine Mine | SFCDR Tributary (Argentine Gulch, SF-242) | -- | -- | 0.48 | X | 0.128 | X | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.48 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL119 | Unnamed Adit | SFCDR Tributary (Boulder Creek, SF-214) | -- | -- | 0.28 | X | 0.0767 | X | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.28 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK007 | Butte & CDA (Idaho Silver) | SFCDR Tributary (Daisy Gulch, SF-206) | -- | -- | 0.27 | X | 0.0310 | X | | 6,480 | | | IGS data review indicates that the mineral production of the mine was uncertain. Site has limited riparian area (0.27 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK010 | Hash House Mine | SFCDR Tributary (Daisy Gulch, SF-206) | -- | -- | 0.27 | X | 0.0310 | X | | 3,360 | | | Processing of the mine rock was not conducted at this site and was done primarily at the bottom of the gulch. Site has limited riparian area (0.27 acre). |
| LOK048 | Snowstorm Apex | SFCDR Tributary (Daisy Gulch, SF-206) | X | X | 0.27 | X | 0.0310 | X | | 6,480 | | | Mine was primarily a copper ore producer. Processing did not occur onsite and was done at LOK008. Site has low human health exposure, moderate erosion potential, limited riparian area (0.27 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL047 | Lottie L. Mine | SFCDR Tributary (Deadman Gulch, SF-209) | X | X | 0.23 | X | 0.0181 | X | | 5,520 | | | Site has low risk of human exposure, no observed erosion potential, limited riparian area (0.23 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL048 | Alma Mine | SFCDR Tributary (Deadman Gulch, SF-209) | X | X | 0.68 | X | 0.0181 | X | | 21,360 | | | Site has low risk of human exposure, moderate erosion potential, limited riparian area (0.68 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL049 | Copper Plate Mine | SFCDR Tributary (Deadman Gulch, SF-209) | -- | -- | 0.30 | X | 0.0181 | X | | 7,200 | | | Site has limited riparian area (0.30 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL051 | Pilot Mine | SFCDR Tributary (Deadman Gulch, SF-209) | X | X | 0.65 | X | 0.0181 | X | | 28,800 | | | Site has low risk of human exposure, moderate erosion potential, limited riparian area (0.65 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL103 | Missoula Mine | SFCDR Tributary (Deadman Gulch, SF-209) | X | | 0 | X | 0.0181 | X | | 6,300 | | | Site has low risk of human exposure and no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL135 | Unnamed Adit | SFCDR Tributary (Deadman Gulch, SF-209) | -- | -- | 0.18 | X | 0.0181 | X | | 200 | X | | Site has limited riparian area (0.18 acre) and low waste volume (20 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL150 | Deadman Gulch Imp Riparian | SFCDR Tributary (Deadman Gulch, SF-209) | -- | -- | 3.02 | X | 0.0181 | X | | 15,100 | | | Site has limited riparian area (3.02 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL153 | Deadman Gulch Imp Riparian | SFCDR Tributary (Deadman Gulch, SF-209) | -- | -- | 1.52 | X | 0.0181 | X | | 7,600 | | | Site has limited riparian area (1.52 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| WAL013 | Granada Mine | SFCDR Tributary (Dexter Gulch, SF-229) | X | X | 0.34 | X | 0.204 | X | | 8,160 | | | Site has low risk of human exposure, no observed erosion potential, limited riparian area (0.34 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK001 | Lucky Calumet No. 1 | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0 | X | 0.108 | X | | 30,960 | | | IGS data review indicates that mine was primarily used for copper ore production. In addition, site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK002 | Lucky Calumet No. 2 | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0.95 | X | 0.108 | X | | 30,480 | | | Site has limited riparian area (0.95 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK005 | Lucky Boy No. 2 | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0.18 | X | 0.108 | X | | 4,320 | | | Site has limited riparian area (0.18 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK006 | Lucky Boy No. 1 | SFCDR Tributary (Gentle Annie Gulch, SF-207) | X | X | 0.17 | X | 0.108 | X | | 6,240 | | | Site has low risk of human exposure, no observed erosion potential, limited riparian area (0.17 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK053 | Unnamed Adit | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0.31 | X | 0.108 | X | | 200 | X | | Site has a small waste volume (200 cy) and limited riparian area (0.31 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL056 | Coughlin Mine | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0 | X | 0.108 | X | | 8,400 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL057 | Butte & CDA Mine | SFCDR Tributary (Gentle Annie Gulch, SF-207) | -- | -- | 0 | X | 0.108 | X | | 18,960 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL043 | Silver Reef Mine | SFCDR Tributary (Gold Hunter Gulch, SF-212) | -- | -- | 0.63 | X | 0.0646 | X | | 17,520 | | | Site has limited riparian area (0.63 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |

TABLE 4
Contingent Mine and Mill Sites for Removal from Selected Remedy
Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed | Human Health Exposure Criteria ¹ | Erosion Potential Criteria ² | Riparian Acreage | Riparian Acreage Criteria ³ | AWQC at the Downstream Segment | Downstream Water Quality Criteria ⁴ | Location Within Watershed Criteria ⁵ | Volume of Waste Materials (cy) | Volume of Waste Materials Criteria ⁶ | Additional Site-Specific Information ⁷ | Notes |
|-----------------|---|---|---|---|------------------|--|--------------------------------|--|---|--------------------------------|---|---|---|
| MUL136 | Unnamed Adit | SFCDR Tributary (Gold Hunter Gulch, SF-212) | -- | -- | 0 | X | 0.0646 | X | | 200 | X | | Site has no riparian area and low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL009 | Silver Shaft | SFCDR Tributary (Grouse Gulch, SF-223) | -- | -- | 0 | X | 11.4 | | | 6,000 | | | Site has no riparian area. |
| MUL013 | We Like Mine | SFCDR Tributary (Grouse Gulch, SF-223) | -- | -- | 0 | X | 11.4 | | | 12,720 | | | Site has no riparian area. BLM performed stabilization of rock dump and water treatment pilot test. |
| MUL014 | Grouse Mine | SFCDR Tributary (Grouse Gulch, SF-223) | -- | -- | 0.33 | X | 11.4 | | | 7,920 | | X | Adit water quality data indicate that the dissolved zinc concentration is low (0.84 mg/L). The selected remedial action contains an active treatment component. Site has limited riparian area (0.33 acre). |
| MUL015 | West Star Mine | SFCDR Tributary (Grouse Gulch, SF-223) | -- | -- | 0 | X | 11.4 | | | 23,000 | | | Site has no riparian area. |
| THO020 | Bullfrog Mine | SFCDR Tributary (Little North Fork, SF-202) | -- | -- | 0 | X | 0.102 | X | | 6,960 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL022 | Sunshine Premiere | SFCDR Tributary (Mill Creek, SF-216) | X | X | 0.32 | X | 0.0231 | X | | 8,400 | | | Site has no human health exposure, moderate erosion potential, limited riparian area (0.32 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL023 | Fanny Gremm Mine | SFCDR Tributary (Mill Creek, SF-216) | | | 0 | X | 0.0231 | X | | 31,200 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL029 | North Franklin Mine | SFCDR Tributary (Mill Creek, SF-216) | X | X | 0.63 | X | 0.0231 | X | | 20,400 | | | Site has moderate human health exposure potential, moderate erosion potential, limited riparian area (0.63 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL030 | Wall Street Mine | SFCDR Tributary (Mill Creek, SF-216) | X | | 0 | X | 0.0231 | X | | 8,640 | | | Site has no human health exposure, no observed erosion potential, no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL031 | Cincinnati Mine | SFCDR Tributary (Mill Creek, SF-216) | X | X | 0 | X | 0.0231 | X | | 8,160 | | | Site has no human health exposure, no observed erosion potential, no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL033 | American Commander No. 2 | SFCDR Tributary (Mill Creek, SF-216) | X | X | 0.46 | | 0.0231 | X | | 15,840 | | | Site has low human health exposure potential, moderate erosion potential, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL139 | Unnamed Adit | SFCDR Tributary (Mill Creek, SF-216) | -- | -- | 0.24 | X | 0.0231 | X | | 200 | X | | Site has small waste volume (200 cy) and limited riparian area (0.24 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL141 | Mill Ck Imp Riparian No. 3 | SFCDR Tributary (Mill Creek, SF-216) | -- | -- | 1.93 | X | 0.0231 | X | | 9,650 | | | Site has limited riparian area (1.93 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL145 | Mill Ck Imp Riparian No. 2 | SFCDR Tributary (Mill Creek, SF-216) | -- | -- | 0 | X | 0.0231 | X | | 4,200 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL146 | Morning No. 3 ^a | SFCDR Tributary (Mill Creek, SF-216) | -- | -- | 0 | X | 0.0231 | X | | 31,440 | | | Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL149 | Mill Creek Impacted Riparian No. 1 | SFCDR Tributary (Mill Creek, SF-216) | -- | -- | 1.13 | X | 0.0231 | X | | 5,650 | | | Site has limited riparian area (1.13 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB070 | Silverore-Inspiration Mine | SFCDR Tributary (Nichols Gulch, SF-245) | -- | -- | 1.3 | X | 0.132 | X | | 31,000 | | | Site has limited riparian area (1.3 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB072 | Western Union Upper Adit | SFCDR Tributary (Nichols Gulch, SF-245) | X | | 0.23 | X | 0.132 | X | | 200 | X | | Site has low human health exposure potential and limited riparian area (0.23 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL085 | Vienna Intl Mine | SFCDR Tributary (Placer Creek, SF-234) | X | X | 0.37 | X | 0.0335 | X | | 200 | X | | Site has low human health exposure potential, moderate erosion potential, limited riparian area (0.37 acre), low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL086 | Wibberding-Golden Slipper | SFCDR Tributary (Placer Creek, SF-234) | X | X | 0 | X | 0.0335 | X | | 30,000 | | | Site has no human health exposure potential, no observed erosion potential, no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL059 | Rock Creek Mine Rock Dump | SFCDR Tributary (Rock Creek, SF-225) | X | X | 0.94 | X | 1.41 | X | | 22,560 | | | Site has moderate human exposure potential, moderate erosion potential, limited riparian area (0.94 acre), and the downstream AWQC exceedance ratio is less than 1.5. |
| MUL060 | Rock Creek Mine | SFCDR Tributary (Rock Creek, SF-225) | -- | -- | 0.21 | X | 0.0359 | X | | 5,040 | | | Site has limited riparian area (0.21 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL008 | Alice Mine | SFCDR Tributary (Ruddy Gulch, SF-224) | | X | 1.1 | X | 0.0445 | X | | 33,000 | | X | IGS waste samples are available indicating that this site is not a risk. In addition, the site has low erosion potential, is located far up in the watershed, has limited riparian area (1.1 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| WAL034 | Shields Gulch Imp Riparian | SFCDR Tributary (Shields Gulch, SF-244) | -- | -- | 6.08 | X | 0.0201 | X | | 78,000 | | | Site has limited riparian area (6.08 acres), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| KLE066 | Rhode Island No. 1 & No. 2 & assoc. adits | SFCDR Tributary (Terror Gulch, SF-252) | -- | -- | 0.38 | X | 0.224 | X | | 200 | X | | Site has small waste volume (200 cy), limited riparian area (0.38 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| KLE068 | St Joe No. 2 | SFCDR Tributary (Terror Gulch, SF-252) | -- | -- | 0.21 | X | 0.224 | X | | 14,000 | | X | IGS sampled the waste dump. Lead concentrations ranged from 84 to 390 mg/kg. In addition, the site has limited riparian area (0.21 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB074 | St. Joe No. 1 | SFCDR Tributary (Terror Gulch, SF-252) | -- | -- | 0 | X | 0.224 | X | | 0 | X | | Remedial action includes passive treatment, and the site has low waste volume. Location of adit is potentially in the St. Joe river watershed. |
| MUL006 | Square Deal Mine | SFCDR Tributary (Trowbridge Gulch, SF-226) | -- | -- | 0.13 | X | 0.109 | X | | 17,520 | | | Site has limited riparian area (0.13 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB076 | Unnamed Adit (May Claim) | SFCDR Tributary (Twomile Creek, SF-248) | -- | -- | 0.18 | X | 0.067 | X | | 200 | X | | Site has limited riparian area (0.18 acre) and low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB078 | Unnamed Adit (Hardscrabble Claim) | SFCDR Tributary (Twomile Creek, SF-248) | X | X | 0.08 | X | 0.067 | X | | 200 | X | | Site has moderate potential for human exposure, moderate erosion potential, limited riparian area (0.08 acre), low waste volume (200 cy), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| LOK017 | Beacon Light | SFCDR Tributary (Unknown, SF-201) | | X | 0 | X | 0.178 | X | | 31,000 | | | Site has high human access, no observed potential for erosion, no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. In addition, the IGS exploration records at Wallace Museum indicate that this mine was an ore producer. |
| MUL073 | Atlas Mine (Carbonate Hill) | SFCDR Tributary (Willow Creek, SF-210) | -- | -- | 0 | X | 0.0490 | X | | 560 | X | X | IGS data indicate that the waste pile is primarily an asbestos pile. Site has no riparian area, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| MUL081 | Reindeer Queen Mine | SFCDR Tributary (Willow Creek, SF-210) | X | X | 0.76 | X | 0.0490 | X | | 8,000 | | X | Site has moderate human exposure potential, moderate erosion potential, limited riparian area (0.76 acre), and IGS waste dump samples indicate minimal risk. |

TABLE 4
 Contingent Mine and Mill Sites for Removal from Selected Remedy
 Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed | Human Health Exposure Criteria ¹ | Erosion Potential Criteria ² | Riparian Acreage | Riparian Acreage Criteria ³ | AWQC at the Downstream Segment | Downstream Water Quality Criteria ⁴ | Location Within Watershed Criteria ⁵ | Volume of Waste Materials (cy) | Volume of Waste Materials Criteria ⁶ | Additional Site-Specific Information ⁷ | Notes |
|-----------------|------------------------------------|--|---|---|------------------|--|--------------------------------|--|---|--------------------------------|---|---|--|
| MUL083 | Copper Queen Mine | SFCDR Tributary (Willow Creek, SF-210) | X | X | 0.64 | X | 0.0490 | X | | 15,360 | | | IGS data indicate that this mine was an extensively developed copper mine. Site has low human health exposure potential, no observed erosion potential, limited riparian area (0.64 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| OSB025 | Capitol Silver Lead No. 3 | SFCDR Tributary (Twomile Creek) | X | X | 0.5 | X | 0.067 | X | | 12,000 | | | Site has low human health exposure potential, no observed erosion potential, limited riparian area (0.5 acre), and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| KLE033 | Polaris Mine | SFCDR Tributary (Unknown, SF-257) | -- | -- | 1.6 | X | 0.05 | X | X | 25,000 | | | Site has limited riparian acreage (1.6 acres) and is located far up in the watershed, and the downstream AWQC exceedance ratio for dissolved zinc is less than 1.0. |
| KLW061 | BH No. 2 | SFCDR (West) | -- | -- | | | | | | 333,120 | | | Additional site characterization is needed to determine risks posed to human health and the environment. If, upon further analysis, actions are determined to be warranted, they could be implemented through the existing ROD for OU 2. |
| KLW062 | Bluebird Mine and Guy Cave Area | SFCDR (West) | -- | -- | | | | | | 51,120 | | | Additional site characterization is needed to determine risks posed to human health and the environment. If, upon further analysis, actions are determined to be warranted, they could be implemented through the existing ROD for OU 2. |
| KLW070 | Milo Creek Impacted Riparian No. 1 | SFCDR (West) | -- | -- | | | | | | 9,350 | | | Additional site characterization is needed to determine risks posed to human health and the environment. If, upon further analysis, actions are determined to be warranted, they could be implemented through the existing ROD for OU 2. |
| KLW095 | Phil Sheridan Mine | SFCDR (West) | -- | -- | | | | | | 19,680 | | | Additional site characterization is needed to determine risks posed to human health and the environment. If, upon further analysis, actions are determined to be warranted, they could be implemented through the existing ROD for OU 2. |

Notes:

¹ Human Health Exposure Criteria – An “X” indicates that the results of analyzing GIS coverages and information gathered during field investigations of mine and mill sites where human health risk observations were available were assigned a human health risk level of none, low, or moderate.

² Erosion Potential Criteria – An “X” indicates that the site, during field investigations in the Upper Basin, was observed to have no erosion potential, minimal erosion potential, or moderate erosion potential.

³ Riparian Acreage Criteria – An “X” indicates that there is minimal riparian area associated with the site.

⁴ Downstream Water Quality Criteria – An “X” indicates that site-specific water quality data (specifically the dissolved zinc AWQC exceedance ratio) indicate that the downstream water quality data do not appear to be impacted by upstream sites. The AWQC exceedance ratio was calculated using the 1997 low-flow dataset for the SFCDR, Big Creek, Moon Creek, and Pine Creek Watersheds. The 2008 low-flow dataset was used for the Canyon Creek and Ninemile Creek Watersheds.

⁵ Location Within Watershed Criteria – An “X” indicates that the site is located in the upper reaches of the watershed outside riparian, floodplain, or stream channel areas.

⁶ Volume of Waste Materials Criteria – An “X” indicates that the initial volumes and types of mine waste materials present at the site were estimated during development of the Preferred Alternative. Sites estimated to have relatively small volumes (typically 200 cubic yards or less) or relatively low-concentration mine wastes (upland waste rock) were identified.

⁷ Additional Site-Specific Information – An “X” indicates that contaminant concentrations, site-specific water quality data, and information from field visits were available for the site and that the data were used to evaluate the potential risks to human health and the environment posed by the site.

-- = Site was not evaluated for human health exposure or erosion potential.

^a According to Hecla records, this site (MUL146) actually the portal and waste rock pile for Morning No. 2.

AWQC = ambient water quality criterion/criteria

cy = cubic yards

IGS = Idaho Geological Survey

mg/kg = milligram(s) per kilogram

mg/L = milligram(s) per liter

OU = Operable Unit

ROD = Record of Decision

SFCDR = South Fork Coeur d'Alene River

TCD = typical conceptual design

TABLE 5

Mine and Mill Sites Retained in the Selected Remedy

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|------------------------|---|------------------|
| KLE047 | BIG CK IMPACTED RIPARIAN: NO. 1 | Big Creek |
| KLE071 | BIG CK IMPACTED RIPARIAN: NO. 3 | Big Creek |
| KLE073 | BIG CK IMPACTED RIPARIAN: NO. 2 | Big Creek |
| BUR067 | TAMARACK NO. 7 (1200 LEVEL) | Canyon Creek |
| BUR072 | STANDARD-MAMMOTH NO. 4 | Canyon Creek |
| BUR073 | STANDARD-MAMMOTH CAMPBELL ADIT | Canyon Creek |
| BUR075 | SHERMAN 1000 LEVEL (OREANO ADIT) | Canyon Creek |
| BUR087 | HERCULES NO. 3 | Canyon Creek |
| BUR090 | HERCULES NO. 4 | Canyon Creek |
| BUR094 | SHERMAN 600 LEVEL | Canyon Creek |
| BUR096 | ANCHOR MINE | Canyon Creek |
| BUR097 | HIDDEN TREASURE MINE | Canyon Creek |
| BUR098 | HERCULES NO. 5 | Canyon Creek |
| BUR107 | AJAX NO.3 | Canyon Creek |
| BUR109 | OOM PAUL NO. 1 | Canyon Creek |
| BUR112 | GEM NO. 2 | Canyon Creek |
| BUR117 | FRISCO MILLSITE | Canyon Creek |
| BUR118 | FRISCO NO. 2 & NO. 1 | Canyon Creek |
| BUR119 | BLACK BEAR NO. 4 | Canyon Creek |
| BUR120 | SILVER MOON MINE | Canyon Creek |
| BUR121 | BLACK BEAR FRACTION | Canyon Creek |
| BUR122 | FLYNN MINE | Canyon Creek |
| BUR124 | OMAHA MINE | Canyon Creek |
| BUR128 | HECLA-STAR MINE & MILLSITE COMPLEX | Canyon Creek |
| BUR129 | TIGER-POORMAN MINE | Canyon Creek |
| BUR130 | MARSH MINE | Canyon Creek |
| BUR141 | CANYON CK IMPACTED FLOODPLAIN | Canyon Creek |
| BUR142 | GEM MILLSITE | Canyon Creek |
| BUR143 | CANYON CK IMPACTED RIPARIAN | Canyon Creek |
| BUR144 | STANDARD-MAMMOTH LOADING AREA | Canyon Creek |
| BUR145 | ONEILL GULCH UNNAMED ROCK DUMP | Canyon Creek |
| BUR146 | GORGE GULCH IMPACTED RIPARIAN | Canyon Creek |
| BUR149 | AJAX NO.2 ADJACENT ROCK DUMP | Canyon Creek |
| BUR150 | CANYON CK GARBAGE DUMP | Canyon Creek |
| BUR153 | CANYON CK IMPACTED FLOODPLAIN (CCSeg02 & CCSeg04) | Canyon Creek |
| BUR177 | JOE MATT MINE | Canyon Creek |
| BUR178 | WEST HECLA MINE | Canyon Creek |
| BUR180 | STANLEY MINE | Canyon Creek |
| BUR190 | GEM NO. 3 | Canyon Creek |
| BUR191 | FRISCO NO. 3 | Canyon Creek |

TABLE 5

Mine and Mill Sites Retained in the Selected Remedy

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|------------------------|---|------------------|
| BUR192 | BLACK BEAR MILLSITE | Canyon Creek |
| OSB047 | CANYON CK FORMOSA REACH SVNRT REHAB | Canyon Creek |
| WAL009 | HECLA-STAR TAILINGS PONDS | Canyon Creek |
| WAL010 | CANYON CK POND REACH SVNRT REHAB | Canyon Creek |
| WAL011 | CANYON SILVER (FORMOSA) MINE | Canyon Creek |
| WAL039 | STANDARD-MAMMOTH MILLSITE | Canyon Creek |
| WAL040 | CANYON CK IMPACTED FLOODPLAIN | Canyon Creek |
| WAL041 | CANYON CK REPOSITORY REACH SVNRT REHAB | Canyon Creek |
| WAL042 | CANYON CK TAILINGS REPOSITORY SVNRT | Canyon Creek |
| WAL081 | WALLACE OLD PRIVATE LANDFILL | Canyon Creek |
| KLE014 | ROYAL ANNE MINE | Moon Creek |
| KLE041 | MOON CK IMPACTED RIPARIAN | Moon Creek |
| BUR051 | SUNSET MINE | Ninemile Creek |
| BUR053 | INTERSTATE-CALLAHAN MINE/ROCK DUMPS | Ninemile Creek |
| BUR055 | INTERSTATE MILLSITE | Ninemile Creek |
| BUR056 | TAMARACK ROCK DUMPS | Ninemile Creek |
| BUR058 | TAMARACK NO. 3 | Ninemile Creek |
| BUR139 | REX NO. 1 | Ninemile Creek |
| BUR140 | NINEMILE CREEK IMPACTED FLOODPLAIN | Ninemile Creek |
| BUR160 | INTERSTATE-CALLAHAN LOWER ROCK DUMPS | Ninemile Creek |
| BUR170 | TAMARACK 400 LEVEL | Ninemile Creek |
| BUR171 | TAMARACK NO. 5 | Ninemile Creek |
| BUR172 | TAMARACK UNNAMED ADIT | Ninemile Creek |
| BUR173 | TAMARACK MILLSITE | Ninemile Creek |
| OSB038 | CALIFORNIA NO. 4 | Ninemile Creek |
| OSB039 | DAYROCK MINE | Ninemile Creek |
| OSB040 | EF NINEMILE CK HECLA REHAB | Ninemile Creek |
| OSB044 | SUCCESS MINE ROCK DUMP | Ninemile Creek |
| OSB048 | AMERICAN MINE | Ninemile Creek |
| OSB052 | DAYROCK MINE TLGS PILE/SVNRT REPOSITORY | Ninemile Creek |
| OSB056 | EF NINEMILE CK IMPACTED RIPARIAN | Ninemile Creek |
| OSB057 | EF NINEMILE CK IMPACTED RIPARIAN | Ninemile Creek |
| OSB058 | EF NINEMILE CK SVNRT REHAB | Ninemile Creek |
| OSB059 | NINEMILE CK BELOW DAYROCK MINE | Ninemile Creek |
| OSB060 | NINEMILE CK SVNRT REHAB NEAR BLACKCLD | Ninemile Creek |
| OSB082 | MONARCH MINE BLACKCLOUD CK | Ninemile Creek |
| OSB088 | ALAMEDA MINE | Ninemile Creek |
| OSB089 | SUCCESS NO.3 | Ninemile Creek |
| OSB115 | OPTION MINE | Ninemile Creek |
| WAL033 | NINEMILE CK POTENTIAL TAILINGS DEPOSIT | Ninemile Creek |

TABLE 5

Mine and Mill Sites Retained in the Selected Remedy

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|------------------------|--|------------------|
| KLW075 | MATCHLESS MINE | Pine Creek |
| KLW079 | GOLD EAGLE MINING CO. | Pine Creek |
| KLW082 | CARBONATE MINE: NO. 2 | Pine Creek |
| KLW085 | CARBONATE MINE: NO. 1 | Pine Creek |
| MAS003 | LIBERAL KING MINE & MILLSITE | Pine Creek |
| MAS007 | NABOB 1300 LEVEL | Pine Creek |
| MAS011 | IDAHO PROSPECT: NO. 2 | Pine Creek |
| MAS012 | LYNCH-PINE CREEK MINE | Pine Creek |
| MAS013 | NABOB 600 LEVEL (300 Level) | Pine Creek |
| MAS014 | HILARITY MINE | Pine Creek |
| MAS015 | LITTLE PITTSBURG MINE: NO. 2 | Pine Creek |
| MAS016 | LITTLE PITTSBURG MINE: NO. 1 | Pine Creek |
| MAS020 | SIDNEY (RED CLOUD) MINE/MILLSITE | Pine Creek |
| MAS021 | NEVADA-STEWART MINE | Pine Creek |
| MAS022 | SURPRISE MINE & UPPER ROCK DUMP | Pine Creek |
| MAS025 | DOUGLAS MINE & MILLSITE | Pine Creek |
| MAS029 | BIG IT MINE | Pine Creek |
| MAS035 | NABOB 600 LEVEL SHAFT | Pine Creek |
| MAS036 | DENVER CK TAILINGS PILE | Pine Creek |
| MAS040 | DENVER CK IMPACTED RIPARIAN: NO. 2 | Pine Creek |
| MAS041 | DENVER CK IMPACTED RIPARIAN: NO. 3 | Pine Creek |
| MAS042 | DENVER CK IMPACTED RIPARIAN: NO. 4 | Pine Creek |
| MAS043 | DENVER CK IMPACTED RIPARIAN: NO. 1 | Pine Creek |
| MAS045 | HIGHLAND CK IMPACTED RIPARIAN | Pine Creek |
| MAS046 | HIGHLAND & RED CLOUD CK IMPACTED RIPAR | Pine Creek |
| MAS054 | MARMION OR SF FRACTION | Pine Creek |
| MAS078 | HIGHLAND-SURPRISE MINE & MILLSITE | Pine Creek |
| MAS083 | NABOB MILLSITE | Pine Creek |
| MAS084 | DOUGLAS MINESITE TAILINGS REPOSITORY | Pine Creek |
| KLE011 ^a | SILVER CRESCENT TAILINGS | SFCDR (West) |
| KLE034 | SILVER DOLLAR MINE | SFCDR (West) |
| KLE035 | SILVER SUMMIT MINE | SFCDR (West) |
| KLE040 | SF CDA RIVER IMPACTED FLOODPLAIN: NO. 5 | SFCDR (West) |
| KLE048 | SF CDA RIVER SVNRT REHAB | SFCDR (West) |
| KLE049 | SF CDA RIVER IMPACTED RIPARIAN (MidGradSeg01 & MidGradSeg02) | SFCDR (West) |
| KLE067 | ST. JOE NO. 4 | SFCDR (West) |
| KLE069 | ST. JOE NO. 3 | SFCDR (West) |
| LOK004 | SNOWSHOE NO. 2 | SFCDR (East) |
| LOK009 | SNOWSTORM NO. 4 | SFCDR (East) |

TABLE 5

Mine and Mill Sites Retained in the Selected Remedy

Evaluation of Mine and Mill Source Sites for Removal from the Forthcoming Upper Basin Selected Remedy

| BLM Site Number | Source Name | Watershed |
|------------------------|---|------------------|
| LOK011 | SNOWSTORM NO. 3 | SFCDR (East) |
| LOK024 | SILVER CABLE MINE | SFCDR (East) |
| MUL012 | STAR 1200 LEVEL | SFCDR (East) |
| MUL018 | MULLAN METALS MINE | SFCDR (East) |
| MUL021 | INDEPENDENCE MINE | SFCDR (East) |
| MUL027 | MORNING NO. 4 ^b | SFCDR (East) |
| MUL028 | MORNING NO. 5 | SFCDR (East) |
| MUL045 | HOMESTAKE MINE | SFCDR (East) |
| MUL052 | COPPER KING MINE | SFCDR (East) |
| MUL053 | NATIONAL MINE | SFCDR (East) |
| MUL054 | UNNAMED ADIT | SFCDR (East) |
| MUL071 | ATLAS MINE | SFCDR (East) |
| MUL120 | BANNER MINE NO. 2 | SFCDR (East) |
| MUL129 | ATLAS MINE ROCK DUMP | SFCDR (East) |
| MUL132 | NATIONAL MILLSITE ADJACENT TAILINGS | SFCDR (East) |
| MUL142 | GROUSE GULCH IMPACTED RIPARIAN | SFCDR (East) |
| OSB065 | SF CDA RIVER IMPACTED FLOODPLAIN: NO. 3 | SFCDR (West) |
| OSB117 | OSBURN ZANETTI STOCKPILED TAILINGS | SFCDR (West) |
| OSB118 | OSBURN NORTH TAILINGS AREA | SFCDR (West) |
| OSB120 | SF CDA RIVER IMPACTED FLOODPLAIN: NO. 4 | SFCDR (West) |
| WAL002 | WESTERN UNION LOWER ADIT | SFCDR (West) |
| WAL004 | SF CDA RIVER RAILROAD YARDS & IMP FLDP | SFCDR (West) |
| WAL014 | ST. ELMO MINE | SFCDR (West) |
| WAL038 | SF CDA RIVER IMPACTED FLOODPLAIN: NO. 1 | SFCDR (East) |
| WAL076 | MARY D CLAIM WORKINGS | SFCDR (East) |
| WAL077 | GOLCONDA TAILINGS | SFCDR (East) |

Notes:

This table presents the mine and mill sites retained in the remedy. There are 5 specific actions that are included within the Remedy that are not specifically mine and mill sites, including: Woodland Park Option C, and remedial actions in Operable Unit 2 (OU 2) in the Bunker Hill Box.

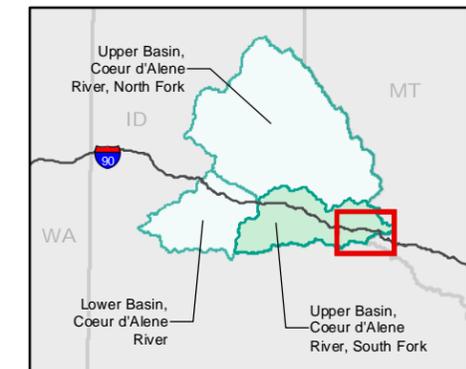
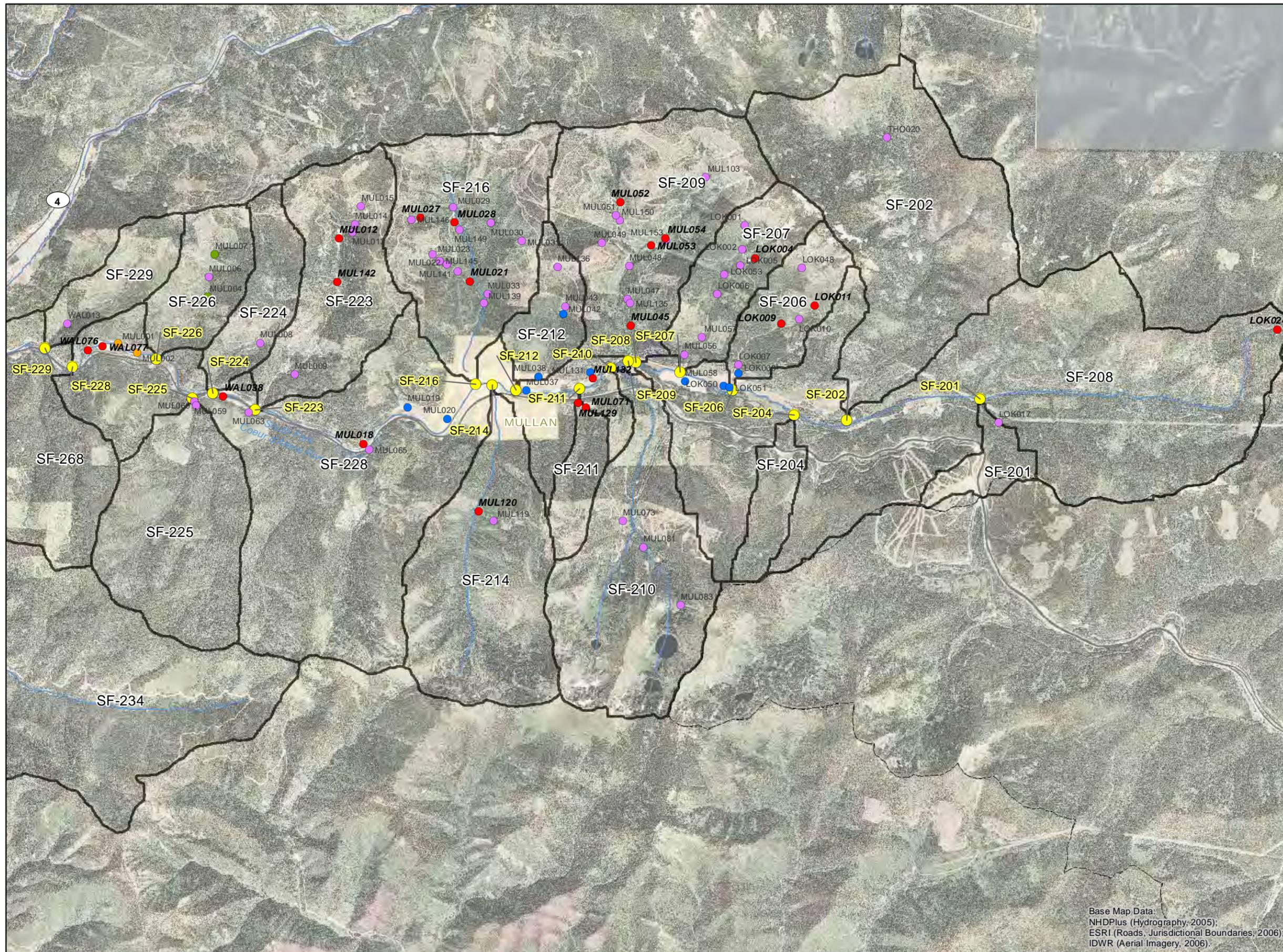
^a The KLE011 source area is actually the Silver Summit Tailings Pond. It is believed that the names were mistakenly switched within the BLM GIS database. For consistency, the BLM naming convention has not been revised.

^b According to Hecla records, this site (MUL027) is actually the Morning No. 3 portal and waste rock pile.

BLM = U.S. Department of the Interior Bureau of Land Management

SFCDR = South Fork Coeur d'Alene River

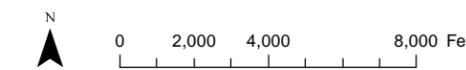
Figures



- Active (Removed)
- Likely Low-Risk Site (Removed)
- Remediated (Removed)
- Removed Based on 2011 Focused Characterization Sampling
- Retained in Selected Remedy
- River/Creek
- City Limit
- County Boundary
- Boundary of Watershed Portion Upstream from Surface Water Monitoring Station

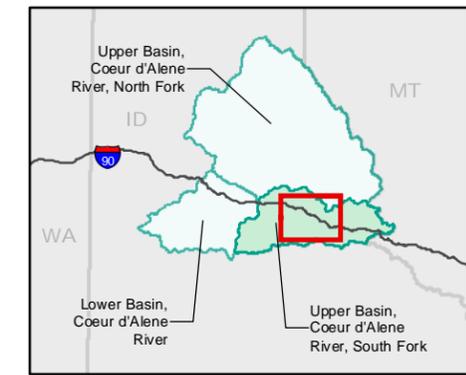
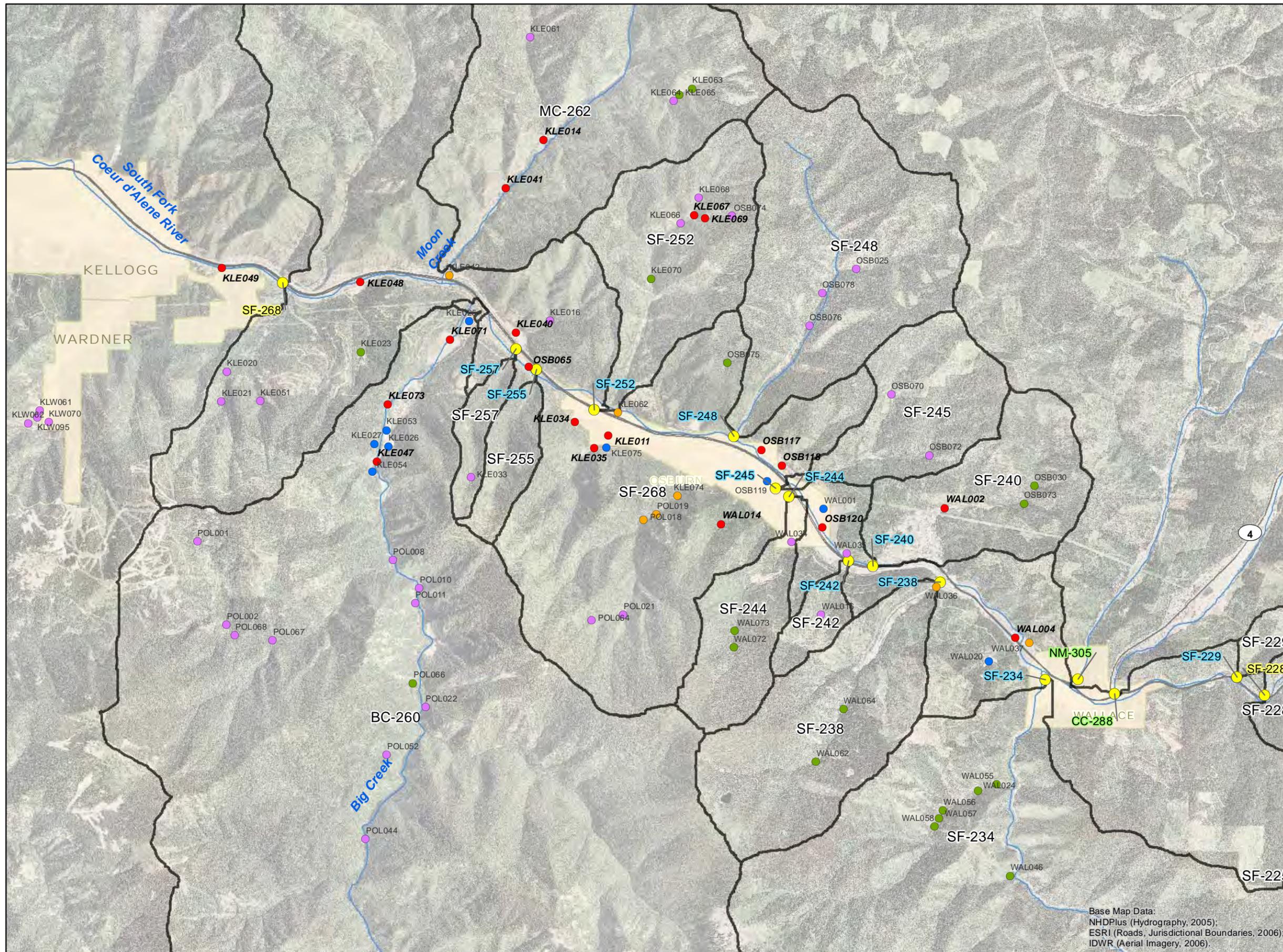
MUL052 - Site Retained in the Selected Remedy

SF-201 1997 Mainstem SFCDR Surface Water Monitoring Station



Base Map Data:
 NHDPlus (Hydrography, 2005);
 ESRI (Roads, Jurisdictional Boundaries, 2006);
 IDWR (Aerial Imagery, 2006).

Figure 1
Summary of Sites Removed from the Selected Remedy in the SFCDR (East) Watershed
Evaluation of Sites to be Removed from the Forthcoming Upper Basin Selected Remedy

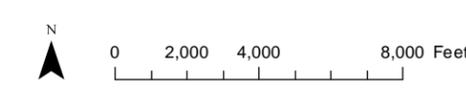


- Active (Removed)
- Likely Low-Risk Site (Removed)
- Remediated (Removed)
- Removed Based on 2011 Focused Characterization Sampling
- Retained in Selected Remedy
- River/Creek
- City Limit
- County Boundary
- Boundary of Watershed Portion Upstream from Surface Water Monitoring Station

WAL002 - Site Retained in the Selected Remedy

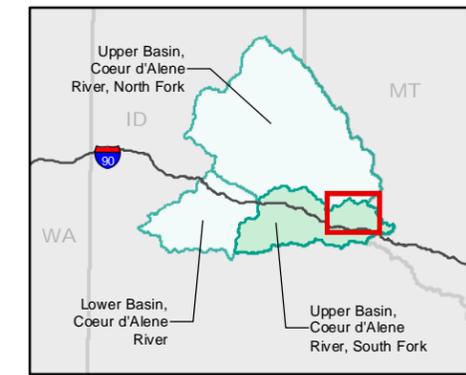
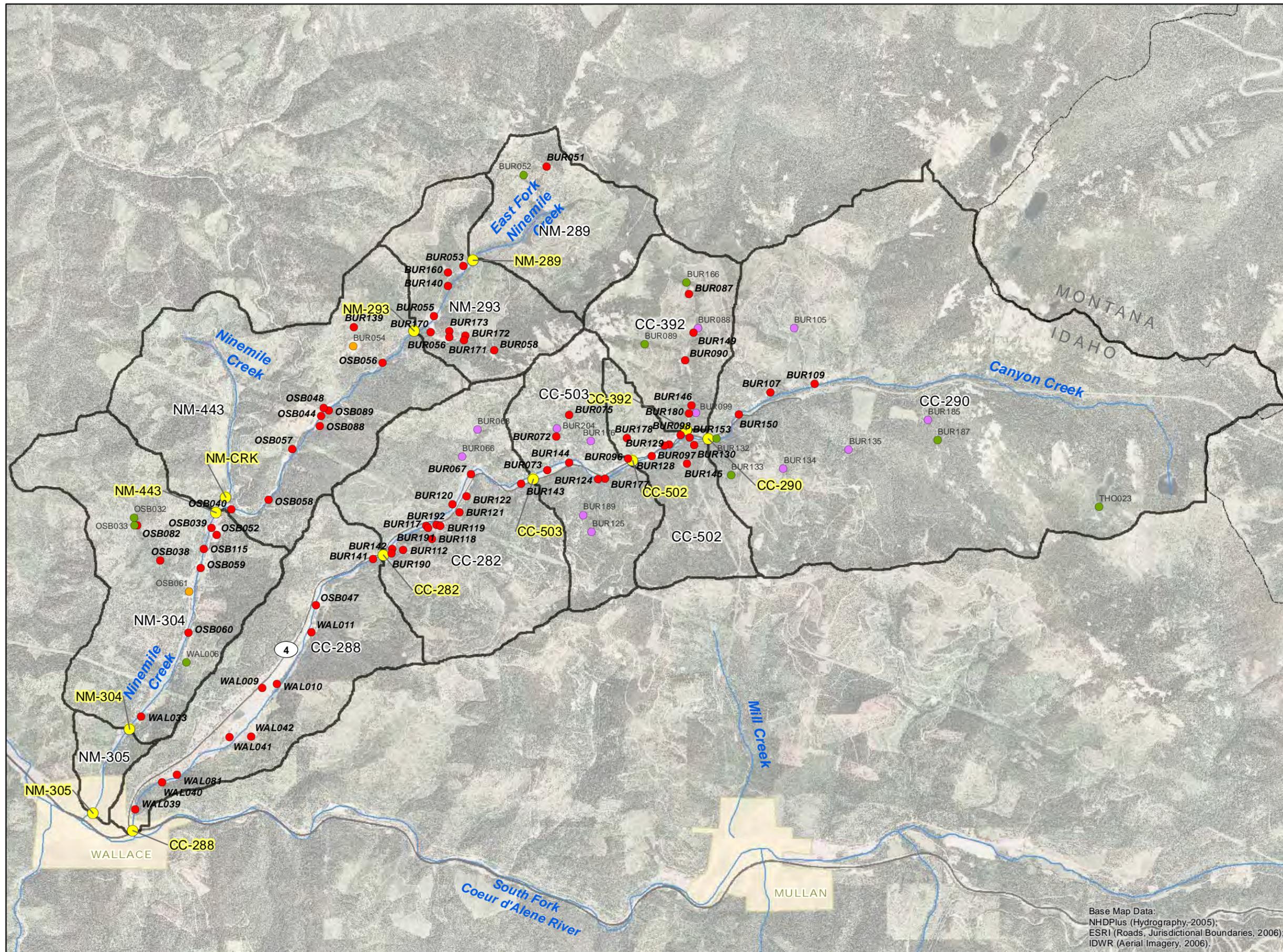
Mainstem SFCDR
 Surface Water Monitoring Stations:
SF-268 2008 Monitoring Station

Tributary
 Surface Water Monitoring Stations:
SF-229 1997 Monitoring Station
NM-305 2007 Monitoring Station



Base Map Data:
 NHDPlus (Hydrography, 2005);
 ESRI (Roads, Jurisdictional Boundaries, 2006);
 IDWR (Aerial Imagery, 2006).

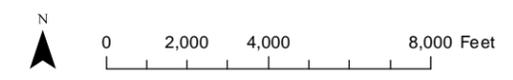
Figure 2
Summary of Sites Removed from the Selected Remedy in the SFCDR (West), Big Creek, and Moon Creek Watersheds
Evaluation of Sites to be Removed from the Forthcoming Upper Basin Selected Remedy



- Active (Removed)
- Likely Low-Risk Site (Removed)
- Remediated (Removed)
- Removed Based on 2011 Focused Characterization Sampling
- Retained in Selected Remedy
- River/Creek
- City Limit
- County Boundary
- Boundary of Watershed Portion Upstream from Surface Water Monitoring Station

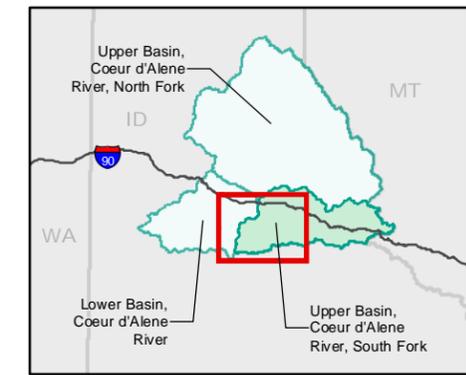
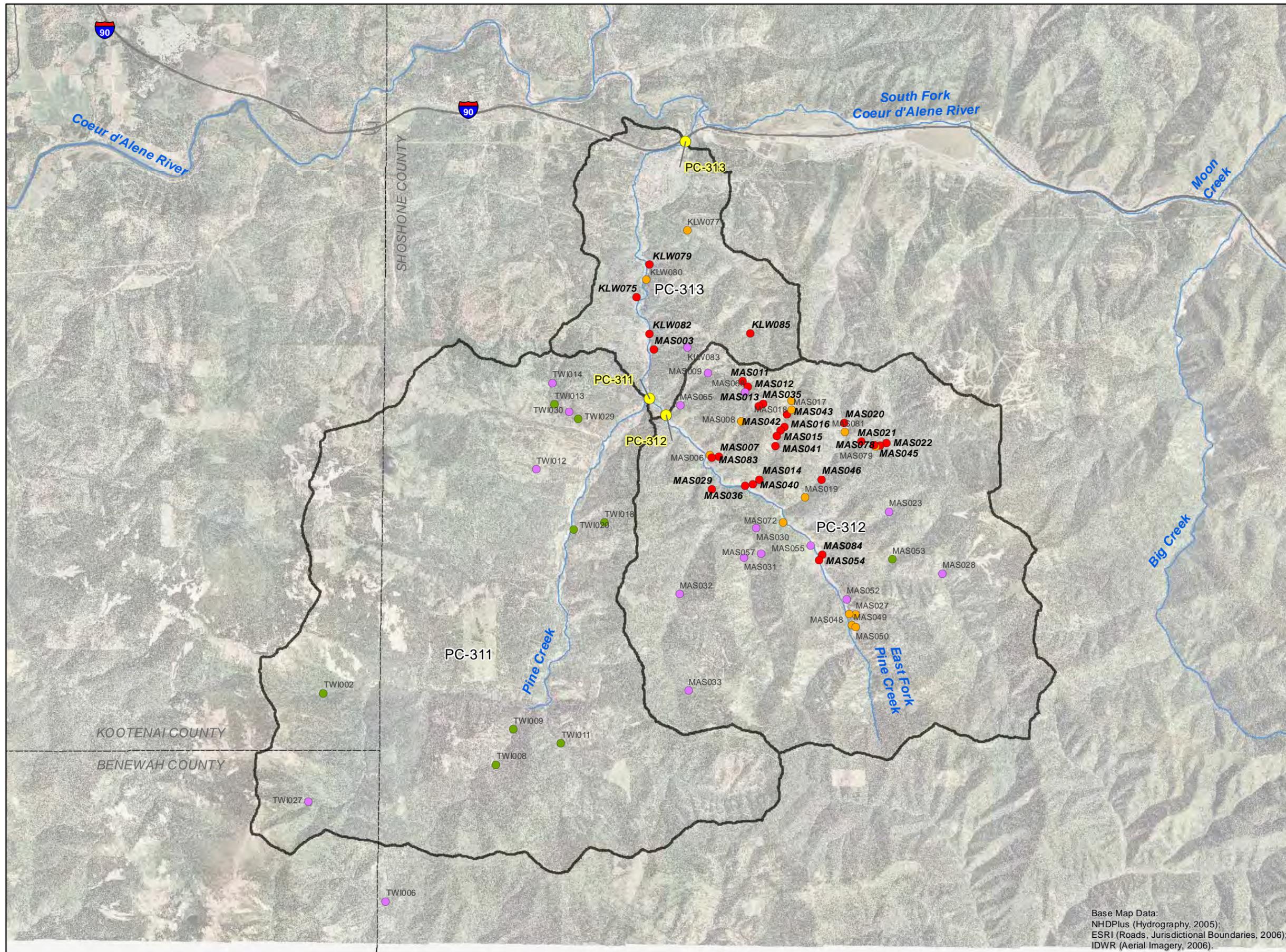
BUR705 - Site Retained in the Selected Remedy

CC-288 2008 Surface Water Monitoring Station



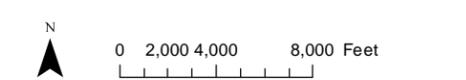
Base Map Data:
 NHDPlus (Hydrography, 2005);
 ESRI (Roads, Jurisdictional Boundaries, 2006);
 IDWR (Aerial Imagery, 2006).

Figure 3
Summary of Sites Removed from the Selected Remedy in the Canyon Creek and Ninemile Creek Watersheds
Evaluation of Sites to be Removed from the Forthcoming Upper Basin Selected Remedy



- Active (Removed)
 - Likely Low-Risk Site (Removed)
 - Remediated (Removed)
 - Removed Based on 2011 Focused Characterization Sampling
 - Retained in Selected Remedy
 - River/Creek
 - ▭ County Boundary
 - ▭ City Limit
 - ▭ Boundary of Watershed Portion Upstream from Surface Water Monitoring Station
- MAS022** - Site Retained in the Selected Remedy

PC-313 1997 Surface Water Monitoring Station



Base Map Data:
 NHDPlus (Hydrography, 2005);
 ESRI (Roads, Jurisdictional Boundaries, 2006);
 IDWR (Aerial Imagery, 2006).

Figure 4
Summary of Sites Removed from the Selected Remedy in the Pine Creek Watershed
Evaluation of Sites to be Removed from the Forthcoming Upper Basin Selected Remedy

