



Proposed Plan to Amend the 2006/2011 Record of Decision Butte Priority Soils Operable Unit

#MTD980502777

April 2019



This proposed plan presents the U.S. Environmental Protection Agency's (EPA's) proposed changes to the existing 2006 Record of Decision (ROD), as modified by the 2011 Explanation of Significant Differences (ESD) for cleanup of the Butte Priority Soils Operable Unit (BPSOU) of the Silver Bow Creek/Butte Area Superfund Site. The 2006 ROD and 2011 ESD are referenced collectively as "2006/2011 ROD" herein. This proposed plan has been prepared by EPA, the lead agency for the BPSOU, in consultation with the Montana Department of Environmental Quality (DEQ), the support agency.

A proposed plan is required as part of EPA's public participation responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, or Superfund) and National Oil and Hazardous Substance Pollution Contingency Plan (40 Code of Federal Regulations Part 300). This is the federal regulation that guides the Superfund program.

This proposed plan includes:

- Brief overview of the history and characteristics of the BPSOU
- Description of the current surface water remedy, the need for modification of the 2006/2011 ROD, and EPA's proposed modification
- Comparison of the proposed modification to the current remedy
- Information on how the public can provide input on the proposed modification within the 60-day public comment period
- Sources for documents and other information

Public Comment Opportunities

The release of the proposed plan starts the 60-day public comment period

April 11 through June 11, 2019.

See page 21 for how to provide comments and where and when the public meetings will be held.

All information received during the public comment period will be carefully reviewed. If significant new information is received, it could result in selection of a final modification that differs from the proposed modification described in this plan. In consultation with DEQ, EPA will select the final modifications to the current remedy and will prepare an amended BPSOU ROD that documents any changes to the 2006/2011 ROD. Public comments will be answered in a responsiveness summary that is part of the amended BPSOU ROD. Any changes will be reflected in the legal instruments, which will implement the remedial decisions made.

Site Background and Characterization

EPA began work at the BPSOU in 1987 (Exhibit 1), starting with strategic removals—time critical removal actions (TCRAs) and expedited response actions (ERAs) to address areas of greatest risk first. Remedial investigation and feasibility study investigations began in the 1990s and were completed in 2005. A ROD was signed in 2006, and an ESD was signed in 2011. Remedial design and construction began in 2006 and continue to the present, including collection and evaluation of significant amounts of data.

The 2006 ROD and the 2011 ESD describe the nature and extent of contamination in surface water, groundwater, and soils at the BPSOU; provide detailed analyses of alternatives for cleanup; and identify the remedy selected by EPA and changes to the remedy applied by the ESD. Documents prepared since the ESD that contribute to this proposed modification include:

- 2015 groundwater data interpretation report
- 2008 to 2013 surface water characterization report
- 2018 groundwater and surface water interaction report
- 2018 draft surface water technical impracticability (TI) evaluation report
- 2018 further remedial elements work plan

These documents are in the administrative record for this proposed plan (see page 22).

Site Description

The Silver Bow Creek/Butte Area site is one of four contiguous Superfund sites in the upper Clark Fork River Basin that extend 140 miles from the rural area north of Butte to the former Milltown Reservoir near Missoula. The BPSOU is in the Butte portion of the Silver Bow Creek/Butte Area Site. It includes the Town of Walkerville, part of Butte north of lower Silver Bow Creek and west of the Berkeley Pit, and a section of land that extends south from lower Silver Bow Creek to Timber Butte (Figure 1). It includes the contaminated alluvial aquifer that results from BPSOU surface contamination. It also includes surface water in lower Silver Bow Creek and Blacktail Creek within the BPSOU boundary.

Nature and Extent of Contamination

BPSOU is primarily centered on “Butte Hill,” the location of the historic Butte Mining District. Extensive underground mining, milling, and mineral processing resulted in widespread distribution of mine waste (such as waste rock, mill tailings, and slag). Wastes interacted with water, impacting soil, groundwater, and surface water throughout the BPSOU. Sources include waste piles, tailings deposits, smelter emissions and railroad beds.

Recent studies determined that uncontrolled sources of contamination remain that contribute to surface water contamination. Sources vary depending on flow regime (Exhibit 2) and include:

- **Base flow and normal high flow conditions:** Sources for these conditions include mine waste (waste rock and tailings) via groundwater input where it is not captured by the existing groundwater collection system; metals-laden sediment and tailings deposits along the bed, banks, and floodplain; and upstream sources outside of the BPSOU.

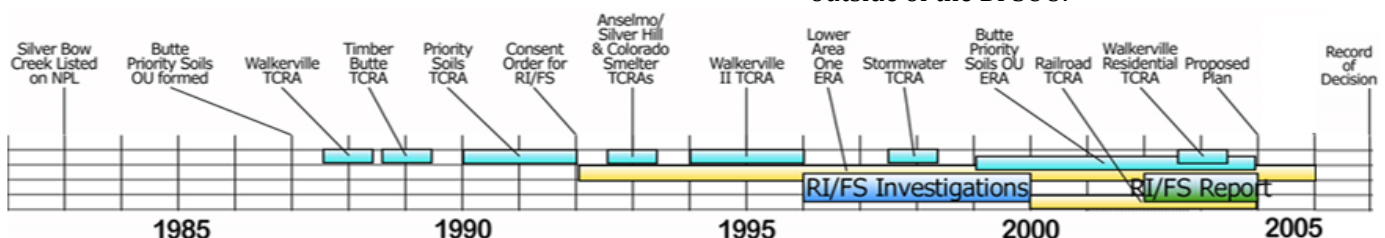


Exhibit 1. Timeline of Response Action and Remedial Investigation/Feasibility Study at BPSOU

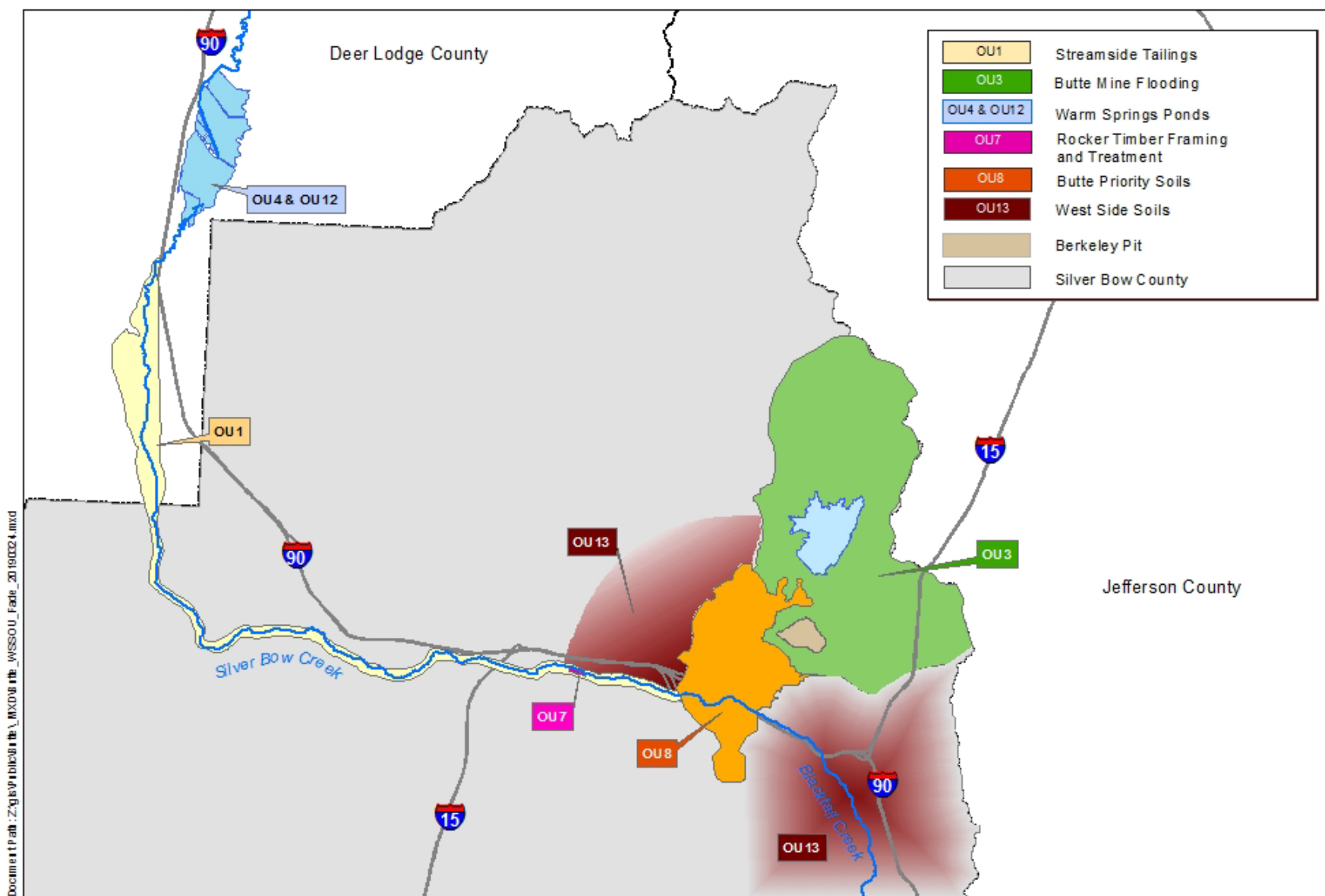
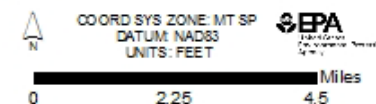


Figure 1
Silver Bow Creek/Butte Area Site Operable Units
 Butte Priority Soils Operable Unit
 Silver Bow Creek/Butte Area Site



- **Wet weather flow conditions:** Sources include mine waste (waste rock and tailings) via runoff and groundwater input and upstream sources outside of the BPSOU.

Analysis of additional surface water, pore water, and near-stream solid media found that the 2006/2011 ROD remedy did not encompass certain areas immediately upstream of the current BPSOU boundary that are impacting surface water. This is one of the reasons for the expanded streambank, sediment, and floodplain waste removals that are included in the proposed modified remedy described in this proposed plan.

- **Base flow.** Times when groundwater inflow comprises the greatest percentage of flow within surface water. Both surface water and groundwater vary seasonally, but base flow generally occurs in late summer and winter when surface water conditions are fairly stable (i.e., not rising or falling and stormwater or snowmelt runoff is not occurring).
- **Normal high flow.** Normal flow that increases above base flow when the regional winter mountain snowpack melts and there is no local wet weather event. In general, the highest concentrations of contaminants are associated with normal high flows and wet weather event flows.
- **Wet weather flow.** Short duration periods when runoff is occurring from Butte Hill as measured at storm drain outfalls and/or when samples are collected at any of the wet weather discharge points. Wet weather flow conditions are highly variable and typically occur during rainfall and snowmelt events from spring through late summer and early fall.

Exhibit 2. BPSOU Flow Regimes

Previous Cleanup Activities

Eleven TCRAs and one ERA were completed to address site contamination (Exhibit 1). These large mine waste removals and storm water control actions were undertaken prior to the original ROD in 2006 and are listed and described in that ROD.

Remedial activities completed or ongoing since 2006 are too numerous to show on a timeline. They include:

- Extensive residential metals abatement
- Installation of upfront storm water best management practices (BMPs) and other storm water source control measures

- Improvements to and ongoing operation of groundwater treatment at the Butte Treatment Lagoons
- Extension of the groundwater collection system
- Ongoing collection and treatment of some groundwater
- Monitoring of surface water and groundwater
- Reclamation of additional source areas
- Maintenance of reclaimed mine waste areas
- Location and operation of a mine waste repository
- Syndicate and Alice Open Mine Pit remediation

This work, along with additional investigations and smaller remedial activities, was done under a CERCLA Section 106 unilateral administrative order issued by EPA in 2011 titled *Administrative Order for Partial Remedial Design/ Remedial Action Implementation and Certain Operation and Maintenance at the Butte Priority Soils Operable Unit/Butte Site* and predecessor orders. That order left the full implementation of the surface water component of the remedy open pending further evaluation of site conditions and additional analysis.

Key to this proposed plan is the selection and implementation of the remainder of the surface water remedy to address near stream mine wastes and contaminated storm water that runs off BPSOU and impacts surface water quality.

Summary of Site Risks

Contaminants of concern (COCs) at the BPSOU—arsenic and heavy metals such as copper, cadmium, lead, mercury, and zinc—are the result of 120 years of hard rock mining, smelting, milling, and other processing activities. Mining and ore-processing wastes in Butte are the primary source materials and come in several different forms: mill tailings, waste rock, slag, smelter fallout, and mixed combinations. Arsenic and metals contained in or released from these wastes to soil, surface water, and groundwater pose significant risks to human and ecological receptors if left uncontrolled. Details of unacceptable

risks at BPSOU are contained in Section 7 of the 2006 ROD.

Applicable or Relevant and Appropriate Requirements

Applicable or relevant and appropriate requirements (ARARs) are existing laws and regulations that a Superfund cleanup must meet on its way to being protective of human health and the environment. They vary from site to site and include standards, requirements, criteria, and limitations.

ARARs fall into two categories:

- **Applicable.** Pertains directly to the site.
- **Relevant and Appropriate.** Addresses a contaminant or situation that is similar enough to the site to be considered “well-suited.”

A cleanup must comply with site-specific ARARs unless there is a reasonable justification to allow part or all of the ARAR to be legally waived pursuant to the CERCLA law. While CERCLA does not require permits for any removal or remedial action work conducted wholly on-site, it does require that work complies with substantive permit requirements.

Surface Water Remedial Action Objectives and Remedial Goals

Under the 2006/2011 ROD, the remedial action objectives for contaminated surface water are to:

- Prevent ingestion or direct contact with contaminated surface water that would result in an unacceptable risk to human health.
- Return surface water to a quality that supports its beneficial uses.
- Prevent source areas from releasing contaminants to surface water that would cause the receiving water to violate surface water ARARs and remedial goals for the BPSOU and prevent degradation of downstream surface water sources, including during storm events. This objective would be modified to recognize the proposed ARAR waivers and replacement standards described below.

- Ensure that point source discharges from any water treatment facility (e.g., water treatment plant, wetland, etc.) meet end-of-the-pipe water quality standards after construction and shakedown periods.
- Prevent further degradation of surface water.
- Meet the more restrictive of chronic aquatic life or human health standards for surface water identified in Circular DEQ-7 through the application of B-1 class standards (see Appendix A of the 2006 BPSOU ROD).

The proposed plan leaves these unchanged, except for the need to waive certain State of Montana DEQ-7 standards (Montana’s water quality standards), to be replaced by federal water quality criteria. A description of acute versus chronic and total recoverable analysis versus dissolved is presented in Exhibit 3 and is useful to understanding the issues.

Current Surface Water Remedy

There are several in-stream ARARs related to surface water and storm water control. A main remedial goal in the 2006/2011 ROD is that surface water quality complies with Montana’s water quality standards (DEQ-7). The main remedial action objective is to control sources of contaminants to surface water (solid media, groundwater, or wet weather runoff).

Stated another way, the existing remedial goal for Blacktail Creek and lower Silver Bow Creek is to maintain the in-stream concentration of site-specific COCs (aluminum, arsenic, cadmium, copper, lead, mercury, silver, and zinc) below the numeric surface water quality standards identified in DEQ-7 for all flow conditions throughout the length of Blacktail Creek, Grove Gulch Creek, and lower Silver Bow Creek—within and directly downstream of the BPSOU. These standards, except for aluminum, are based on the *total recoverable sample fraction*. As noted on page 16, EPA is proposing specific points of compliance for monitoring and measuring compliance with this remedial goal.

The State of Montana DEQ-7 standards are as stringent as, or more stringent than, corresponding federal water quality criteria enacted by EPA. When

determining compliance with performance standards, the most stringent of the human health or aquatic water quality criterion is applied.

Exposure: Acute Versus Chronic

There are two types of exposure:

- **Chronic.** Long term. Applies to base flow or normal high flow in the creek (average conditions over 4 days).
- **Acute.** Instantaneous or short term. Applies to infrequent wet weather flows in the creek (1-hour average), usually an event like a summer thunderstorm.

Zones of acute aquatic life toxicity (i.e., mixing zones) are not allowed. COC concentrations cannot exceed chronic or acute DEQ-7 aquatic life standards.

Metals Analysis: Total Recoverable Versus Dissolved

- **Total recoverable metals (or total metals).** Analysis of an unfiltered water sample, including any solid undissolved sediments, visible or microscopic.
- **Dissolved metals analysis.** Analysis of water after it has been filtered (typically a 0.45-micron filter). The filtered (dissolved) concentration is always less than or equal to the unfiltered (total) concentration.

Federal water quality criteria are based on dissolved metals analysis as the dissolved fraction represents the bioavailable contamination to aquatic life. Montana has adopted a more conservative set of standards by using the same federal standards* but instead applying them to a total recoverable (unfiltered) sample.

*This comparison is simplified. Minor correction factors and other nuances between the State and Federal standards apply.

Exhibit 3. Explanation of Common Terms for Exposure and Metals Analysis

Why Modification is Needed

Since the 2006/2011 ROD, the responsible parties, have implemented significant portions of the remedy, but more work remains. The responsible parties, EPA, and DEQ have been analyzing remaining technical issues and evaluations, primarily focused on the current remedy's surface water component while other remedial work continues.

Additional detailed studies have also been conducted to help finalize conceptual aspects for the remedy. Most have centered around how to best protect surface water quality in Blacktail and Silver Bow Creeks given the physical limitations of the BPSOU. As a result, EPA is proposing changes to the

2006/2011 ROD, which provide for more extensive and more detailed remediation than what was originally specified. Even with this enhanced remediation, surface water data and current modeling evaluations indicate there is uncertainty as to whether remedial goals and ARAR standards for surface water (State of Montana DEQ-7 standards) could be met.

Under Superfund law, ARAR standards that initially apply to cleanup can be waived and replaced by other protective standards, where appropriate, if it is technically impracticable from an engineering perspective to meet the initial standards. This means there are limitations that even a "maximum" cleanup cannot overcome.

"Impracticable" means an action or activity cannot be done with technical and engineering resources. It is "impossible to carry out."

Uncertainty over whether standards could be met prompted EPA to conduct a surface water Technical Impracticability evaluation in consultation with DEQ to determine the likelihood of meeting remedial goals and ARAR standards for surface water (2006/2011 ROD). A variety of surface water and storm water remedial components were evaluated quantitatively in the TI report.

A TI evaluation determines if achieving a remedial goal or ARAR standard is "technically practicable from an engineering perspective."

The TI evaluation made the following conclusions for the different surface water flow regimes at the BPSOU:

- **Up front TI waiver for wet weather flow conditions.** Total recoverable copper and zinc water quality measurements are unlikely to meet Montana DEQ-7 *acute* water quality standards during most wet weather flow conditions, regardless of measures used to control COCs. Thus, these standards should be waived as technically

impracticable and replaced. The replacements are called “waived-to performance standards.” They use the same numerical standards, but the analysis is for *dissolved* metals, a dissolved conversion factor is applied, and there is no minimum or maximum value for hardness.¹. These upfront waivers are predicated on Atlantic Richfield’s agreement to implement a robust stormwater remedy, which implements technically practicable BMPs.

- **Potential post-construction waivers.** Under base flow and normal high flow conditions, total recoverable copper and lead Montana DEQ-7 standards would likely be met after additional near stream waste removals and groundwater capture are completed. Under wet weather conditions, total recoverable cadmium, lead, and silver DEQ-7 standards would likely be met after the storm water control system is expanded and other remediation actions are taken. However, because the TI evaluation demonstrated that there is uncertainty associated with these contaminant standards, these performance standards could be waived and replaced, but only if necessary. Post-remediation monitoring would have to show exceedances occurred more than once in three years and were not due to a malfunction of the remedy or could not be corrected by remedial actions within the scope of the remedy.

Reasons why the State performance standards cannot be met for all COCs under all flow conditions include:

- **Size.** Silver Bow Creek is a small stream with limited ability to assimilate storm water. During runoff events, flow from uncontrolled storm water drainages can easily exceed the amount of base flow in the stream channel. Sometimes, most of the water in Silver Bow Creek is storm water runoff.
- **Upstream Contamination.** During storm events, Blacktail Creek upstream of BPSOU often exceeds State of Montana standards, preventing water quality standards from being met downstream.

- **Lack of Space.** Few locations are available to catch and manage storm water from Butte Hill.
- **Widespread sources of copper and zinc.** Mine waste was used throughout Butte as fill for road beds and municipal infrastructure. There is no one place that can be cleaned up that will fix the storm water issue.

Based partially on the 2018 TI evaluation results, EPA, in consultation with DEQ, chose to modify the existing remedy. The modification presented in this plan describes the changes EPA proposes.

EPA’s Proposed Modification for Surface Water Remedy

EPA’s proposed modification includes two major components (Exhibit 4):

- **Waive** two Montana DEQ-7 standards up front (as discussed above) and provide a possible post-construction determination to waive others only if non-compliance is demonstrated.
- **Expand** removals, storm water BMPs, and groundwater capture area. Reroute part of Silver Bow Creek.

Post-construction waivers are only available to the responsible parties if they complete the expanded removals, which have already been outlined for the public in the remedial design elements.

TI waivers are a fundamental change to the surface water remedy and require a ROD amendment under Superfund guidance, including evaluation against Superfund evaluation criteria. The expansion changes are significant and require an explanation. Fundamental and significant changes to the 2006/2011 ROD are described in this document and EPA and DEQ are seeking public comment them.

¹ Hardness is a measure of the amount of dissolved calcium and magnesium in the water.

Details of the proposed modification are based on evaluation of data obtained since the 2006/2011 ROD (including the TI evaluation), State of Montana input, and the community's desire to increase the amount of mine waste removals in the upper Silver Bow Creek area to allow for future land uses.

Waive Fundamental Change	Expand Significant Change
•Waive acute water quality standards up front for copper and zinc, replace with federal ambient water quality standards. •Waive standards for additional COCs, if needed, under specific criteria.	•Construct specific storm water basins. •Increase removals of near-stream mine waste. •Reroute part of Silver Bow Creek. •Expand groundwater capture area.

Exhibit 4. Main Components of EPA's Modification

TI Waivers

Further remedial work is ongoing to complete construction of the surface water remedy. In May 2018, EPA released the remedial element work plans for public review. They describe the remaining construction work elements that are technically practicable for addressing surface water quality at the BPSOU.

Along with development of these plans, monitoring data and EPA modeling efforts justify the waiver of certain State of Montana surface water quality standards (page 6). The 2006/2011 ROD noted uncertainty in whether strict state water quality performance standards in surface water could be met even after the remedy was fully implemented.

TI evaluation is the first step required under CERCLA to justify waiving an ARAR as technically impracticable. A waiver is not taken lightly and requires considerable site understanding and analysis. It is not a loophole for avoiding cleanup. For a waiver to be granted, there must be an "alternative remedial strategy" that is protective of human health and the environment. In this case, the water quality criteria set at the federal level are still protective of aquatic receptors and suitable to use as waived-to

performance standards. Subject to consideration of public comment, the ROD will be expanded to include additional cleanup actions associated with the surface water component of the remedy.

The TI evaluation analyzed a spectrum of remedial options that could be implemented at the BPSOU and evaluated their effectiveness. It examined whether it was possible to meet state standards (based on total recoverable analysis) with the use of technically practicable surface water remedial actions. If not, the waived-to performance standard would be based on the dissolved sample fraction (filtered).

EPA's proposed modification includes waivers of the existing surface water standards both upfront and as contingencies, as described below.

Upon ROD modification, EPA would:

- Waive State of Montana DEQ-7 acute aquatic life standards for copper and zinc based on a total recoverable (unfiltered) sample and adopt the federal acute aquatic life standards based on a dissolved (filtered) sample.
- Adopt the current DEQ-7 allowance for one exceedance of water quality standards in three years (considered in the TI evaluation).
- Adopt the updated DEQ-7 aquatic life standard for cadmium (May 2017).

After implementation of the remedy and a period of monitoring:

- If certain acute performance standards (cadmium, lead, and silver) and/or chronic performance standards (copper and lead) for these previously unwaived COCs are not met, waivers of these standards would be granted but only after construction and monitoring. If waived, protective federal water quality standards would be substituted.
- If dissolved acute performance standards for copper and zinc are not met, further waivers to the federal water quality criteria in place at that time may be needed.

Table 1 provides details of the proposed up-front and post-construction waivers and lists COCs for which no waivers are proposed or anticipated.

Expansion of Surface Water Remedy Components

Although many factors at the BPSOU make it impracticable to meet water quality performance standards during storm events, it is possible to significantly reduce the magnitude and frequency of exceedances through full implementation of the surface water remedy.

New work elements for surface water developed by EPA and DEQ during the TI evaluation include:

1. Significantly expand mine waste removal in upper Silver Bow Creek (associated with BMP implementation), the Blacktail Creek area, and portions of the Butte Reduction Works area. Reroute a portion of Silver Bow Creek around and away from the contaminant source at the Butte Reduction Works and Slag Canyon area and removing certain tailings and contaminated material in this area.
2. Add groundwater capture in areas west and south of the BPSOU Subdrain.
3. Specify large-scale BMPs for storm water control (locations and sizes of detention basins). These would be the final round of iterative BMPs called for in the 2006 ROD.

Implementation of the expanded work elements makes three components in the 2006/2011 ROD unnecessary. They would be removed as part of the final three significant changes as shown below:

1. Remove the contingency to install a conventional treatment plant for chemical treatment of storm water.
2. Remove the option for augmentation of flow to attain remedial goals
3. Remove the need to evaluate and implement infiltration barriers in the Diggings East and Northside Tailings areas, as these areas would be removed.

These elements are described in Table 2 and shown conceptually in Figure 2.

Modified Remedy Evaluation

Superfund requires that any fundamental change to an existing ROD be evaluated using the nine criteria used for all RODs (Exhibit 5). Evaluation ensures the modified remedy can meet EPA's mission of protecting human health and the environment. Significant changes are not required to be evaluated in this manner, but EPA has included them in the analysis below to ensure full public comment on the proposed, revised remedy.

The modified remedy for surface water remediation was first evaluated against the two threshold criteria. Threshold criteria must be met for an alternative to move forward to modification. The five primary balancing criteria were then used to compare the 2006/2011 ROD to the modified remedy. Evaluation against the two modifying criteria will not be made until after the public comment period ends as comments are an important indicator of public acceptance. Results of the evaluation are presented below.

Threshold Criteria

Protection of Human Health and the Environment

The modified remedy's use of federal replacement standards for copper and zinc during wet weather events is protective of human health and the environment. Replacement standards are based on the dissolved (filtered) sample fraction and are national surface water quality criteria enacted by EPA pursuant to the Clean Water Act. While not as conservative as Montana standards, they are protective of aquatic life. Because in-stream human health standards must also be met in normal flow conditions and the replacement standards are more stringent than the human health standards, human health is protected.

Table 1. In-Stream Surface Water Performance Standards and Proposed Waived-to Performance Standards

CONTAMINANT	BASE FLOW AND NORMAL HIGH FLOW COMPLIANCE STANDARD (The more stringent of the Chronic Aquatic or Human Health standard) ^{a,b}	WET WEATHER FLOW COMPLIANCE STANDARD (Acute Aquatic standard) ^{a,b}
Standards Proposed to be Waived Up Front^a		
Copper ^c	No waiver, remains 2.85 µg/L, total recoverable	3.6 µg/L, dissolved
Zinc ^c	No waiver, remains 37 µg/L, total recoverable	36 µg/L, dissolved
Standards Proposed as Potential Post-Construction Waivers, Only if Need Is Demonstrated^a		
Cadmium ^d	No waiver, adopts new 0.26 µg/L, total recoverable standard	0.49 µg/L, dissolved
Copper	Biotic Ligand Model^e	Biotic Ligand Model^e
Lead	0.54 µg/L, dissolved	14 µg/L, dissolved
Silver	no standard ^f	0.30 µg/L, dissolved
Zinc	No waiver, remains 37 µg/L, total recoverable	Applicable Federal standard at time of compliance standard determination
Standards for which No Waiver Is Currently Needed or Proposed (currently in compliance)		
Aluminum ^g	87 µg/L, dissolved	750 µg/L, dissolved
Arsenic	10 µg/L, total recoverable	340 µg/L, total recoverable
Cadmium ^d	Adopt new 0.26 µg/L total recoverable standard	Adopt new 0.49 µg/L total recoverable standard, unless need for post-construction waiver is demonstrated (see above)
Iron	1,000 µg/L, total recoverable	no standard ^f
Mercury	0.05 µg/L, total recoverable	1.7 µg/L, total recoverable
Zinc	37 µg/L, total recoverable	N/A -waived up front, see above

Notes:

µg/L = micrograms per liter, N/A = not applicable

Bold italicized font denotes a waived-to performance standard

a. Numeric replacement performance standards are based on published federal water quality criteria, issued pursuant to section 403(a) of the federal Clean Water Act, 33. U.S. Code (U.S.C.) § 1314(a). See <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>. All contaminants would be eligible for replacement to other federally accepted performance standards for determining compliance if necessary.

b. Standards for cadmium, copper, lead, silver, and zinc are hardness-dependent. Values shown are calculated at a hardness of 25 milligrams per liter unless otherwise shown.

c. The DEQ-7 standards for acute copper and zinc are waived and replaced with federal water quality criteria based on section 121(d)(4)(C) of CERCLA, 42 U.S.C. § 9621(d)(4)(C), referred to as the technical impracticability waiver.

d. The cadmium standards are updated according to the May 2017 version of Circular DEQ-7.

e. The Biotic Ligand Model (BLM) criterion in place at the time of compliance standard determination shall be the replacement standard for copper for both chronic and acute conditions. For acute conditions (wet weather events), the BLM standard or any other appropriate EPA-approved methodology that would perform in non-equilibrium conditions, such as storm water or diel pH cycling, shall be used. The criteria for defining frequency for collection of individual parameters would be defined in the surface water monitoring plan.

f. No chronic standard exists for silver, and no acute standard exists for iron.

g. The DEQ-7 standards for aluminum refer to the dissolved fraction and do not represent a waiver of a ROD performance standard.

Table 2. Expanded Remedy Modifications

Existing ROD (2006/2011)		2019 Proposed Plan for ROD Amendment	
Component	Description of Component	Expansion	Description of Modified Remedy
Sediment and Waste Removal from Blacktail and Silver Bow Creek Channels	Excavate contaminated sediment, stream banks, and adjacent floodplain wastes from the reach of Blacktail Creek just above the confluence with upper Silver Bow Creek, through the slag canyon, and down to the reconstructed floodplain and stream channel in Lower Area One.	Expand waste removals in streams upstream and downstream of confluence. Move Silver Bow Creek out of Slag Canyon.	- Based on analysis of data collected during remediation and extensive public input, expand removals and require additional hydraulic control. Upstream direction. Add bank sediment and nearby floodplain waste removal along Blacktail Creek (George Street to Grove Gulch). Downstream direction. Remove tailings, slag, contaminated soils, and other waste from Butte Reduction Works (southern portion of the site) to allow Silver Bow Creek to be moved into the new corridor (Figure 2).
Surface Water Management for Base Flow Remediation	- Groundwater control and capture is primary component of remedial action addressing surface water contamination during base flow conditions. - Add appropriate hydraulic controls and groundwater capture if groundwater not captured by the existing capture systems is found to discharge to and adversely affect surface water quality.	Expand ground-water control and capture system along Blacktail Creek and through the Butte Reduction Works/ Slag Canyon area.	- Install groundwater controls in Butte Reduction Works area to keep contaminated groundwater there from discharging to reconstructed creek channel. Install similar controls along Blacktail Creek. - Route contaminated groundwater from new systems to the Butte Treatment Lagoons . - Revegetate and provide a public area for possible recreational use—a continuous link between remedies upstream (Blacktail Creek and upper Silver Bow Creek) and downstream (through Lower Area One).
Surface Water Management for Storm Water Remediation – Iterative BMP Program	- Use iterative process to implement BMPs and monitor to meet water quality performance standards in a 15-year time frame. - Specific BMPs are not prescribed but could include storm water ponds if appropriate.	Remove mine waste to construct storm water controls in upper Silver Bow Creek.	- Construct final storm water controls (primarily detention ponds) to settle out contaminated suspended sediments from Buffalo Gulch and drainages reporting to upper Silver Bow Creek for 10-year storm event. - Remove buried tailings in upper Silver Bow Creek at Diggings East and Northside Tailings to accommodate new basins. <i>This is in response to public input.</i> - A new repository location for waste disposal may be determined during remedial design if the existing Butte Mine Waste Repository is not appropriate for the disposal of removed waste material. Any such effort would be coordinated with Butte Silver Bow County and be preceded by public comment and input.
Surface Water Management for Storm Water Remediation – Storm Water Treatment Contingency	- Capture/treat storm water runoff if BMPs do not achieve goal of meeting surface water performance standards in Silver Bow Creek during storm water events. - Evaluate amount of storm water that could practicably be treated. Collect and treat storm flows (up to maximum practicable design criterion) by lime precipitation in a newly constructed plant.	Remove contingency requirement for storm water treatment.	- Total recoverable copper and zinc are unlikely to meet DEQ-7 acute water quality standards during most wet weather flow conditions regardless of measures implemented to control COCs, including treating storm water in a treatment plant. - Storm water capture and conventional treatment is impracticable due to space limitations and may not be more reliable/effective than ponds and other BMPs. - Detention ponds treat storm water by settling suspended solids making this contingency unnecessary.
In-Stream Flow Augmentation Contingency	Add off-site source water, if needed, to supplement surface water remedial components to improve flow and quality of water in Silver Bow Creek but only after the major remedial components are designed and implemented.	Remove flow augmentation contingency.	- The modified remedy would be protective without the need for flow augmentation. - Butte Mine Flooding OU's eventual treated water discharge may fulfill this contingency, but the timeline for that water is unknown and may be decades in the future. No other likely water sources are available (the active mine imports water).
Evaluation of Infiltration Barriers	Evaluate infiltration barriers over wastes in the lower portion of upper Silver Bow Creek corridor below Harrison Avenue (Diggings East and Northside Tailings).	Remove requirement for evaluation of infiltration barriers	With removal of buried tailings at the Diggings East and Northside Tailings to accommodate storm water basins, this requirement is no longer necessary.

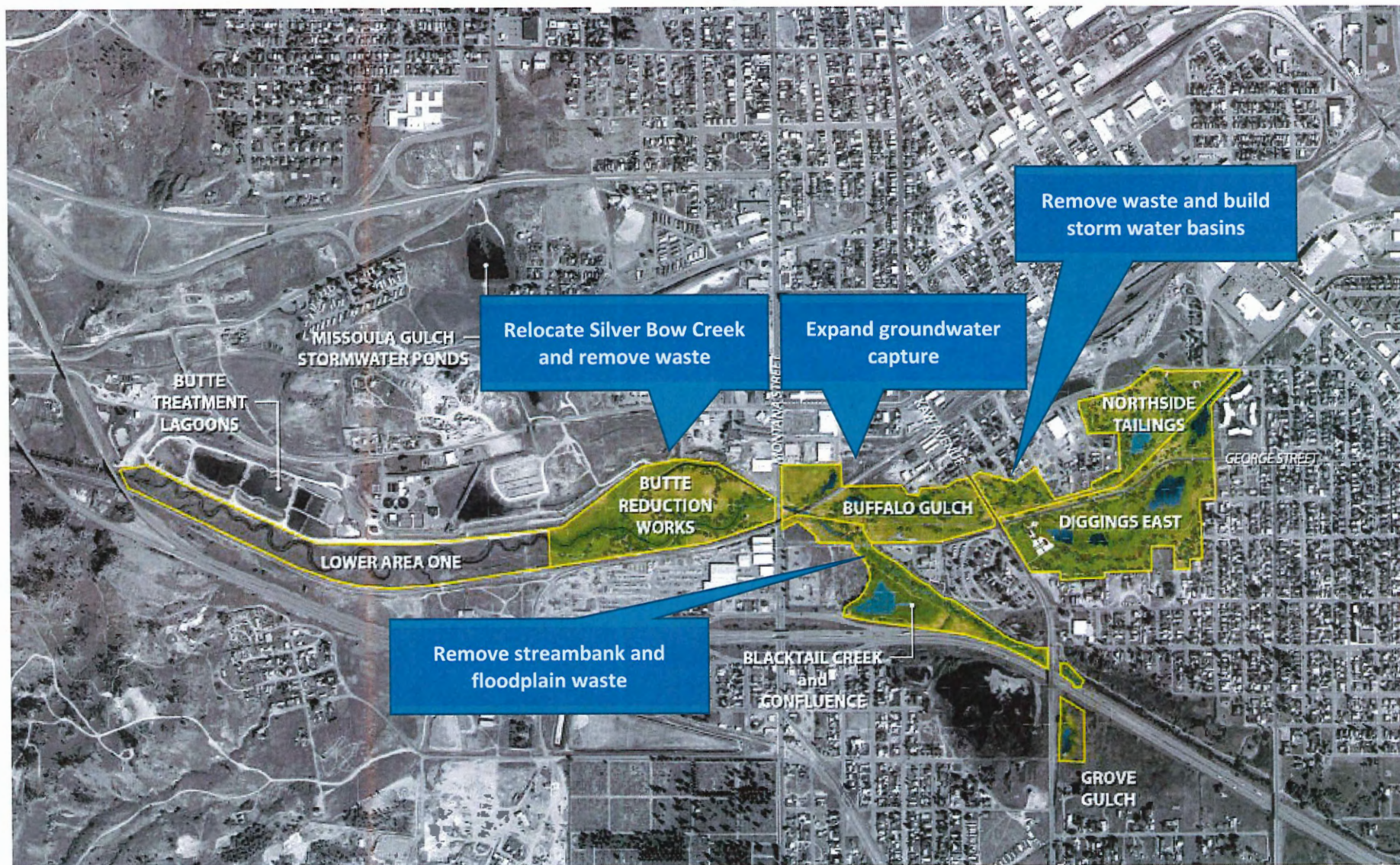


Figure 2
Locations of Surface Water Remedy Components
 Butte Priority Soils Operable Unit
 Silver Bow Creek /Butte Area Site

Figure produced by Land Design, Inc.

Threshold Criteria

1. **Overall Protection of Human Health and the Environment.** Are human health and the environment adequately protected by eliminating, reducing, or controlling exposures?
2. **Compliance with ARARs.** Are federal and state environmental statutes, regulations, and other requirements that pertain to the alternative met? If not, is a waiver justified?

Primary Balancing Criteria

3. **Long-term Effectiveness and Permanence.** What is the magnitude of residual risk from untreated wastes? Are human health and the environment protected over time?
4. **Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment.** Is treatment used to reduce harmful effects of principal contaminants, their ability to move, and the amount of contamination present?
5. **Short-term Effectiveness.** What is the length of time needed to implement the remedy and what risks are posed to workers, the community, and the environment during implementation?
6. **Implementability.** What are the technical issues and feasibility of implementation, such as availability of goods and services?
7. **Cost.** What are the estimated costs?

Modifying Criteria

8. **State/Support Agency Acceptance.** Does the state agree with the proposed modification?
9. **Community Acceptance.** Does the community agree with the proposed modification?

Exhibit 5. Nine Superfund Evaluation Criteria

The existing requirements for groundwater capture and removal of contaminated sediments, stream banks, and nearby floodplain wastes were found to be protective in the 2006/2011 ROD. Expansion of areas where waste is removed and where groundwater is collected for treatment should be more protective as it would improve water quality under both types of flow conditions (base and high flow). Removal of tailings to accommodate storm water BMP construction would further reduce a source of contamination to groundwater.

In contrast to the more generalized approach to storm water control in the 2006/2011 ROD, the

proposed modification includes specificity for installation of storm water retention/detention ponds. Again, this should increase the protectiveness of the remedy.

Ponds would improve surface water quality in two ways:

- Suspended sediment containing COCs would settle out before stored water is released, resulting in lower total recoverable metals concentrations.
- Water storage would significantly reduce the number of times per year that storm water would be released to surface water, resulting in fewer potential exceedances of performance standards.

The modified remedy's more prescriptive approach to storm water controls should result in a remedy that is equal to or more protective than the iterative process for storm water control BMPs found in the 2006/2011 ROD.

Compliance with ARARs

Waiver of certain in-stream surface water standards and use of federal replacement standards for copper and zinc during wet weather events is compliant with ARARs, as modified. The CERCLA statute allows ARARs designated in the 2006/2011 ROD to be waived based on an evaluation that they are technically impracticable from an engineering perspective, to be replaced by federal water quality criteria ARARs.

The replacement performance standards (Table 1) for *acute* copper and zinc during wet weather events are based on the dissolved (filtered) sample fraction and are national surface water quality criteria enacted by EPA pursuant to the Clean Water Act. They are protective of aquatic life.

As discussed previously, the TI evaluation showed uncertainty in the ability of some standards to be met even after remediation. Thus, the modified remedy includes *potential* waivers for surface water ARARs (Table 1)—specifically for copper and lead (chronic conditions) and cadmium, lead, and silver (acute conditions)—if needed. The waivers would be

activated only if exceedances are measured after the remedy is implemented.

No changes are needed for groundwater because those standards were waived for the BPSOU alluvial aquifer in the 2006 ROD.

Balancing Criteria

Long-Term Effectiveness and Permanence

The modified remedy for surface water is expected to provide long-term protection to a greater degree than the original remedy selected in the 2006/2011 ROD. Removal of contaminated sediment, stream banks, and nearby floodplain waste was evaluated for the 2006/2011 ROD and found to be effective and permanent. The modified remedy expands upon existing removals and relocates the stream through the Butte Reduction Works Smelter area. This should increase long-term effectiveness and protection and reduce long-term operation and maintenance.

Storm water controls are limited by land availability, so there would be times when design capacities are exceeded and untreated storm water discharges to surface water. This may recontaminate bed sediment and reduce long-term effectiveness. However, the magnitude of recontamination is expected to be less under the modified remedy. Recontaminated bed sediment would be removed, if necessary, resulting in a notable improvement in long-term effectiveness and permanence.

Long-term operations and maintenance of the storm water basins and other BMPs would be critical to the success and permanence of the remedy. With proper operations and maintenance, the storm water basins are expected to be an effective measure for capturing and removing COCs and contaminated sediment in storm water.

Reduction of Toxicity, Mobility, or Volume through Treatment

The physical removal of bed, bank, and floodplain sediment and tailings materials under the modified remedy would result in a reduction in toxicity and mobility of mining wastes by removing them from the in-stream or near-stream environment. Removal of tailings from storm water BMP areas would reduce mobility of COCs to groundwater.

Primary mining wastes removed as part of the remedy would be moved from one location (floodplain environments) to another (secure repositories) without treatment. Accordingly, volumes of those materials would not change with removal from one location to another. In the feasibility study that preceded the 2006 ROD, active treatment was screened out as potential option for mine waste solid media.

Physical removal of sediments in storm water through settling in the basins is considered treatment. Toxicity and mobility of contaminants in storm water are anticipated to be considerably reduced with use of storm water ponds. As runoff from wet weather and snowmelt events enter the ponds, contaminants will be removed through settling, filtration, or biological and chemical (sorption) means. Accumulated sediments will periodically be removed from the ponds during routine operations and maintenance. There will be no active treatment of these sediments.

In total, the modified remedy satisfies this criterion as well as, if not better than, the 2006/2011 ROD.

Short-Term Effectiveness

Construction for the proposed modification would use standard equipment, such as excavators and trucks. This type and scale of construction is common locally and poses low risks to workers and the community. Other risks, such as those from dust and storm water runoff during construction, will be mitigated.

Removal of bed sediments under the modified remedy could include isolating surface waters. Working in relatively short sections would ease environmental impacts. Work in stream beds and banks may cause short-term, adverse impacts on water quality. Impacts may continue through reconstruction and restabilization (the first one or two high-flow events), but loading reductions occur thereafter. Waste removals away from flowing surface water would have no short-term effects.

Storm water ponds would be effective immediately and would reduce total recoverable concentrations of COCs in captured storm water through settling. The ponds would reduce peak flow rates from Butte Hill

drainages, mitigating the peak load of contaminated storm water entering surface water.

There is no significant difference in short-term effectiveness between the 2006/2011 ROD and the modified remedy.

Implementability

The TI waiver to replacement standards is implementable and the modified surface water remedy components are readily implementable. Construction of additional storm water ponds and expansion of mine waste removals and groundwater capture areas use techniques of a type and scale common to the BPSOU. Materials and services needed are readily available nearby.

Rerouting Silver Bow Creek around and away from the contaminant source at the Butte Reduction Works and slag canyon area is implementable. It is similar to stream reconstruction work performed at Lower Area One in the late 1990s. Again, the construction techniques are similar to those commonly used at BPSOU, and materials and services needed are readily available.

Elimination of the 2006/2011 ROD's potential construction of a storm water treatment plant increases remedy implementability.

Cost

Removal area and waste volumes for the modified remedy are substantially larger than those envisioned in the 2006/2011 ROD and costs are expected to be greater for these elements. The 2006/2011 ROD did not identify installation of specific storm water retention/detention basins, but the proposed basins and other stormwater features described in this proposed plan are similar to sediment basins and other stormwater controls described in the original ROD and were included in all the general description and cost estimate of storm water BMPs found in the original ROD (except for Grove Gulch stormwater controls as this area is proposed to be added to the BPSOU boundary).

Therefore, with the exception of the Grove Gulch stormwater controls, the stormwater control features described in this proposed plan do not add additional costs to the original ROD cost estimate. Costs related

to the storm water treatment plant contingency and the infiltration barrier contingency, which are proposed to be removed from the BPSOU remedy, lessen the estimated cost of the overall remedy.

Overall, based on initial estimates described below, additional costs associated with the modified remedy's more extensive removals may be slightly greater than the 2006/2011 ROD's costs of construction of a conventional treatment plant for storm water treatment. However, given the anticipated effectiveness of the floodplain and upper Silver Bow Creek waste removals and the new stormwater ponds, the added cost associated with the proposed modification is not excessive.

Specific, preliminary cost information regarding the proposed expanded and removed remedial elements follows:

- Additional Removal Costs at Diggings East and Northside Tailings - \$13 million.
- Additional Removal and Groundwater Control Costs at Blacktail Creek and Butte Reduction Works - \$20 million.
- Additional Stormwater Control Costs at Grove Gulch - \$950,000.
- Additional RMAP Expansion Costs - \$3 million.
- Estimated Total Additional Costs - \$36,950,000.
- The estimated costs of the Stormwater Treatment Plant and the Infiltration Barriers, which will no longer be required under the proposed ROD Amendment, is approximately \$35 million dollars according to cost range estimates found in the 2006/2011 ROD.

Modifying Criteria

State Acceptance

The State of Montana will make its determination after review and considering the information received during the public comment period.

Community Acceptance

Community acceptance will be assessed based on comments received on this proposed plan.

Non-Significant or Minor Modifications

Thirteen *non-significant or minor modifications* to the existing remedy are included in this proposed plan. These do not significantly or fundamentally alter the existing remedy. Thus, Superfund guidance requires only that they be recorded in the post-decision document file.

They are presented below to inform the public and stakeholders. EPA and DEQ will carefully consider any public comment on these matters as an amended ROD is developed.

- 1. Clarify and expand BPSOU boundary.** The revised boundary incorporates both banks of Grove Gulch to just upstream of its confluence with Blacktail Creek (Figure 3). The original boundary traced Kaw Avenue instead of explicitly including the east bank of Grove Gulch on the east side of Kaw Avenue. The revised boundary is also expanded east to accommodate a proposed small storm water pond upstream of where Grove Gulch crosses the interstate. The remainder of the BPSOU boundary is unchanged.
- 2. Change and expand the RMAP boundary.** The 2006 ROD allows for residential cleanup expansion, as needed. In 2011, the Residential Metals Abatement Program (RMAP) attic dust program was expanded to areas south and west of the BPSOU boundary, encompassing the southern urban area of Butte. This modification expands the RMAP boundary further to encompass rural residential development (outside the BPSOU) to the north, south, and west, including Rocker (Figure 4). Work in the expanded area will include all RMAP facets (soils, living area dust, lead-based paint, and attic dust) except for the property-by-property systematic sampling and assessment approach. Properties outside the BPSOU boundary but within the RMAP expansion area will be sampled by request only.
- 3. Revise points of compliance and determination of compliance.** The prescriptive surface water monitoring of the 2006/2011 ROD (Section 12.6.6.2) will be simplified to points of compliance at SS-06G and SS-07 (Figure 5). Other monitoring stations will remain in the network as needed, but

compliance will be determined at these two farthest downstream stations. Effluent from the Butte wastewater treatment plant enters between SS-06G and SS-07. The surface water sampling methodology will be modified to allow for additional compositing methods at the compliance sampling locations.

- 4. Simplify compliance determination.** The 2006/2011 ROD specified a flow-weighted concentration approach to determining compliance. The modified approach is simpler. Upstream and downstream samples will be collected, regardless of flow conditions in the creek. If concentrations from downstream stations exceed the performance standard, concentrations would be compared to those measured at the upstream station. Upstream stations can be modified or changed with EPA and DEQ approval. If the concentration upstream is greater than downstream, the downstream sample is in compliance.
- 5. Allow sludge dewatering, drying, and management.** The 2006/2011 ROD stated that the Butte Reduction Works area would not be used for Butte Treatment Lagoon sludge management. However, with approved modifications and upgrades to the Butte Treatment Lagoons, a safe and protective area for sludge management was developed and is now allowed for use. Sludge from the lagoons is now dried nearby and then disposed of in the Butte Mine Waste Repository.
- 6. Revise definition of *wet weather* events for surface water flow regime.** For compliance monitoring, *wet weather flow conditions* and *wet weather events* will be defined as when there is measurable outflow from any of the primary outlets of the following main existing or planned storm water ponds within the BPSOU: CB-9 in Missoula Gulch, the Diggings East basin, the Buffalo Gulch basin, and the East Buffalo Gulch/Northside Tailings basin.

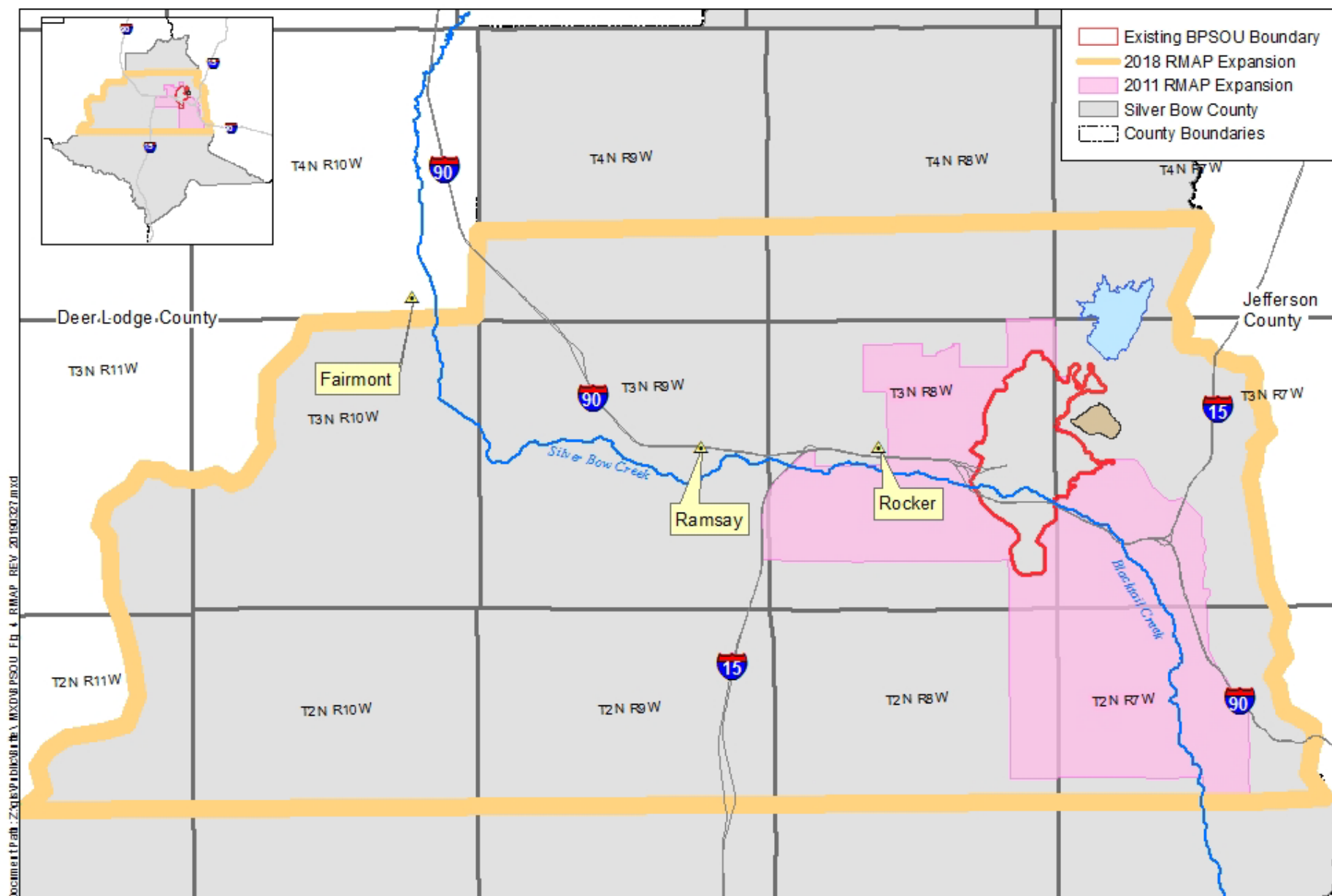
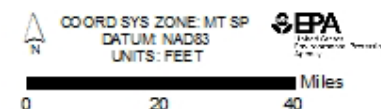


Figure 4
Revised RMAP Boundary
Residential Metals Abatement Program Expansion Area
 Butte Priority Soils Operable Unit
 Silver Bow Creek/Butte Area Site



- 7. Modify West Camp pumping level requirements.** Water levels will be allowed to exceed the specified elevation described in the 2006/2011 ROD for brief periods to provide short-term additional capacity in the Butte Treatment Lagoons for operational flexibility. Under the 2006/2011 ROD, the West Camp bedrock groundwater level must be kept below an elevation of 5,435 feet through pumping and then treatment in the Butte Treatment Lagoons. With this modification, if additional capacity is *temporarily* needed in the lagoons, pumping from West Camp may be paused. A temporary resultant rise in groundwater elevation in the West Camp well is allowed.
- 8. Modify RMAP target numbers.** Numbers per year for sampling and remediation are modified from those stated in the 2006/2011 ROD to account for additional remediation at properties that are visited multiple times (e.g., for remodels and re-roofing, when Butte-Silver Bow (BSB) County returns to a previously remediated property multiple times).
- 9. Correct lead bioavailability percentage used in the risk assessment.** The Integrated Exposure Uptake Biokinetic lead model used to set soil action levels for lead-contaminated soil in BPSOU was run with a bioavailability of 12 percent for soil and 30 percent for indoor dust per the risk assessment. The 2006 ROD misstated these as 10 percent for both in Section 7.1.2.
- 10. Correct test animals used in the risk assessment.** Bioavailability studies for lead and arsenic described in the 2006 ROD used rats and swine, not monkeys and swine. The 2006 ROD misstated these in both Sections 7.1.2 and 7.1.3.
- 11. Better describe the mandate for future health studies.** The 2006/2011 ROD requires future human health studies on a periodic basis but does not specifically describe their exact nature. The modification specifies:
- BSB County, in coordination with the Medical Monitoring Working Group, will periodically evaluate medical monitoring (i.e., biomonitoring) data approaches and data compiled under the medical monitoring program every five years for a period of 30

years. The first of these studies was completed and approved by EPA in 2014. Five additional periodic evaluations will be conducted over the next 25 years.

- Reports documenting these periodic evaluations will respect the personal privacy of the participants and will be available to the public, EPA, DEQ, and responsible parties for the BPSOU.
- All stakeholder parties will continue to facilitate, participate, and contribute with the Medical Monitoring Working Group.

12. Confirm that compliance with human health ARARs for surface water is not required during wet weather conditions. As noted above, in-stream surface water quality must meet human health standards in normal flow conditions. The replacement standards are more stringent than human health standards. Human health exposure pathways of concern, which focus on drinking water consumption and consumption of fish, are not likely to occur during acute, wet weather events.

13. Use of the names Metro Storm Drain and MSD subdrain. Site documents and the 2006 ROD referred to the storm water channel and subdrain between the Montana Resources concentrator and the Visitor's Center as the Metro Storm Drain and MSD subdrain. Any future reference will now be upper Silver Bow Creek and BPSOU subdrain.

Protectiveness Summary

The 2006 ROD remedy, 2011 ESD, and the proposed changes for the BPSOU remedy described in this document address potential or actual threats to human health or welfare or the environment resulting from heavy metals and arsenic in soils, indoor dust, surface water and groundwater. The remedy incorporates many prior response actions done under removal or other authority.

The modified remedy will achieve the remedial action objectives established for the BPSOU, is fully protective of human health and the environment, and meets or appropriately waives ARARs established for the BPSOU. All other components of the 2006/2011 ROD not specifically addressed in this document or the amended ROD remain in effect.

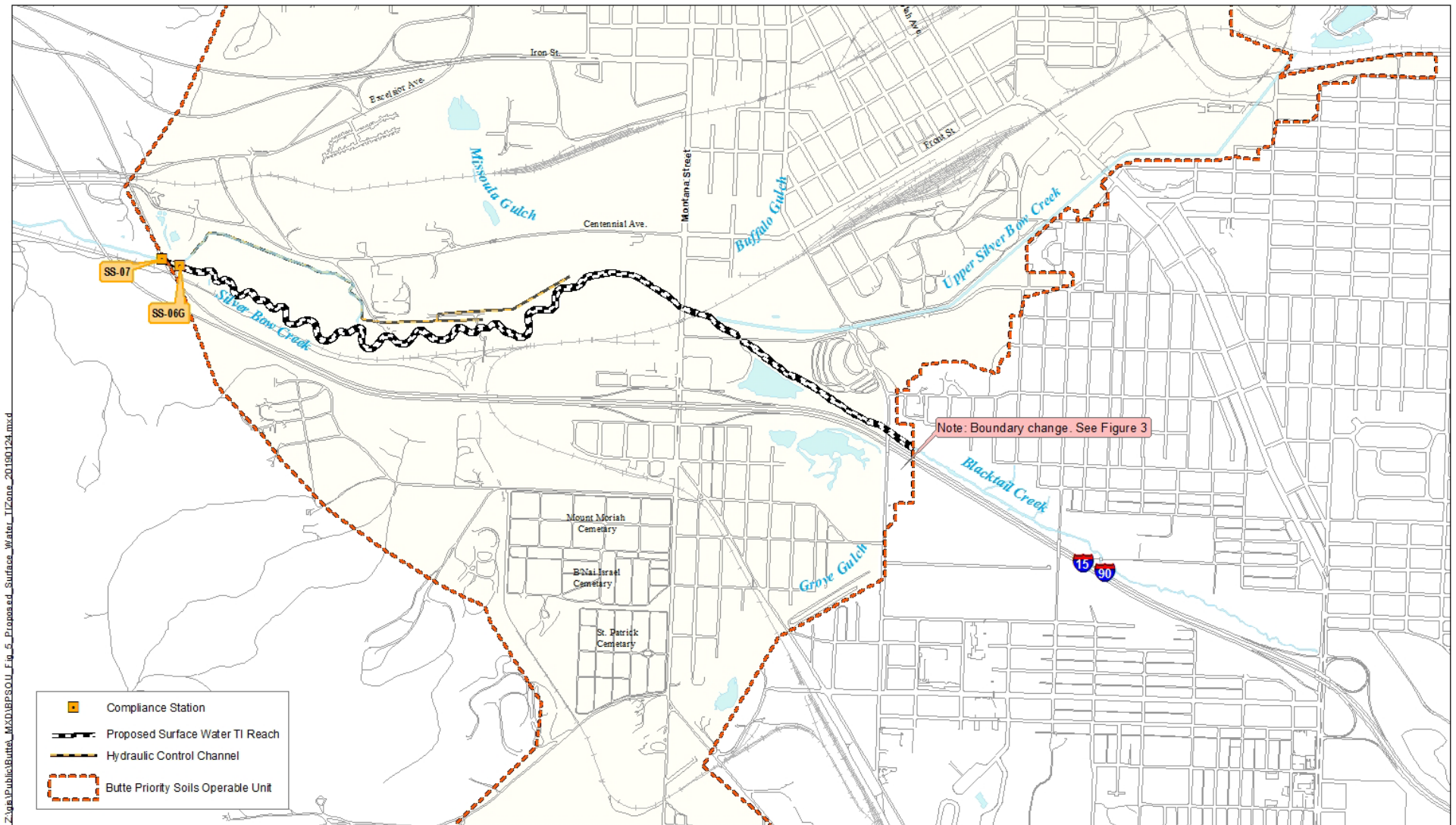


Figure 5
Proposed Surface Water Technical Impracticability Reach with Compliance Stations
 Butte Priority Soils Operable Unit
 Silver Bow Creek/Butte Area Site

Community Participation

Upcoming Public Meetings

EPA will provide a short presentation about the proposed plan at two public meetings. Please join us. It's a great opportunity to learn.

BPSOU Public Comment Meetings

April 23, 2019

and

May 23, 2019

Montana Tech Campus Library Auditorium

1300 W. Park Street

Butte, Montana

6:00 to 8:30 p.m.

If you like, you can provide your comments orally at the public meetings. They will be recorded by a stenographer.

EPA will also give a presentation on the BPSOU proposed plan to the BSB Council of Commissioners. That presentation is scheduled for April 10, 2019.

Fact Sheet

EPA has prepared a two-page fact sheet that is available on EPA's website.

Providing Written Comment

The 60-day public comment period for the proposed plan runs from **April 11 to June 11, 2019**.

Please send written comments (regular or email) to:

Chris Wardell
U.S. EPA, Region 8
1595 Wynkoop Street (80C-PAI)
Denver, CO 80202
BPSOUPPcomments@epa.gov

Site Contacts

If you have questions or need additional help, please contact the following representatives:

U.S. EPA, Region 8

- Nikia Greene, Remedial Project Manager, (406) 457-5019, greene.nikia@epa.gov
- Chris Wardell, Community Involvement Coordinator, (800) 227-8917, ext. 312-6062
wardell.christopher@epa.gov

Montana DEQ

- Daryl Reed, DEQ Project Officer, (406) 444-6433, dreed@mt.gov
- Christine Mandiloff, Public Information Specialist, (406) 444-6469, chirstine.mandiloff@mt.gov

Acronyms Used

ARARs	Applicable or relevant and appropriate requirements
BMPs	best management practices
BPSOU	Butte Priority Soils Operable Unit
BSB	Butte-Silver Bow
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COCs	contaminants of concern.
DEQ	Montana Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
ERAs	expedited response actions
ESD	explanation of significant differences
ROD	record of decision
TCRAs	time critical removal actions
TI	technical impracticability

Site Documents

Key documents used to prepare this proposed plan are shown in Exhibit 6. They are available to the public at the EPA Superfund Records Center, 10 W. 15th Street, Suite 3200, Helena, Montana, Monday through Friday, 8 to 4:30. Please call to confirm that access is available: (406) 457-5046 or (866) 457-2690 (toll free).

The documents are also available at EPA's BPSOU website: www.epa.gov/superfund/silver-bow-butte.

The complete administrative record for this proposed plan and ROD amendment can be accessed on compact disc at the Montana Tech Library, 1300 W. Park Street, Butte, Montana.

- **EPA. 2006.** *Record of Decision. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2011.** *Explanation of Significant Differences to the 2006 Butte Priority Soils Operable Unit Record of Decision. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2011.** *Unilateral Administrative Order for Partial Remedial Design, Remedial Action and Certain Operation and Maintenance Activities for the Butte Priority Soils Operable Unit. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2015.** *2011-2013 Ground Water Data Analysis Report. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA and MDEQ. 2017.** *2008 to 2013 Surface Water Characterization Report. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2018.** *Draft Surface Water Technical Impracticability Evaluation Report. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2018.** *Groundwater and Surface Water Interaction Report. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*
- **EPA. 2018.** *Further Remedial Elements Scope of Work. Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site.*

Exhibit 6. Documents Used to Prepare the Proposed Plan