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June 2026

This Proposed Plan (2026 Proposed Plan) presents the U.S. Environmental Protection Agency's (EPA's) proposed changes to the remedy selected in the [2006 Record of Decision \(ROD\)](#) (as modified by the [2011 Explanation of Significant Differences \(ESD\)](#) and [2020 ROD Amendment \(RODA\)](#)) for cleanup of the Butte Priority Soils Operable Unit (BPSOU) of the Silver Bow Creek/Butte Area Superfund Site (the Superfund Site). These three decision documents are referenced collectively as the "Selected Remedy" herein. ***This 2026 Proposed Plan proposes changes only to the portion of the Selected Remedy addressing contaminated residential soil and interior dust, including both living space and attic dust.***

In 2024, the EPA released a similar Proposed Plan to change only the portion of the Selected Remedy that addresses contaminated residential soil and interior dust; however, the 2024 Proposed Plan applied the 2024 *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (2024 Lead Guidance). The 2024 Lead Guidance was superseded by the 2025 [Residential Lead Directive for CERCLA Sites and RCRA Hazardous Waste Cleanup Program Facilities](#) (2025 Lead Directive), which is being applied through this new Proposed Plan.

This 2026 Proposed Plan replaces the 2024 Proposed Plan.

The EPA is the lead agency for the BPSOU and has prepared this 2026 Proposed Plan in conjunction with the Montana Department of Environmental Quality (DEQ), the support agency. This 2026 Proposed Plan is part of the EPA's public participation responsibilities and is required to be issued by the lead agency to fulfill the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 117(a) and National Oil and Hazardous Substances Pollution Contingency Plan (NCP) § 300.430(f)(2).

The public is encouraged to review and comment on the proposed changes presented in this document. The EPA, in consultation with DEQ, will carefully evaluate all information received during the public comment period. Significant new information received during the public comment period may result in the EPA revising the proposed changes described in this 2026 Proposed Plan. The EPA will prepare a RODA¹ that documents the selected changes to the Selected Remedy and will respond to public comments received on the 2026 Proposed Plan in a Responsiveness Summary².

This 2026 Proposed Plan includes the following information:

- Brief Superfund Site history and background (page 2).

Public Meeting

The release of this 2026 Proposed Plan starts the 30-day public comment period (June 1 through June 30, 2026). EPA will give a presentation about this Proposed Plan.

BPSOU Proposed Plan Public Meeting

Tuesday, June 16

The Montana Tech Library Auditorium

1300 West Park Street

6:00 to 7:00 pm

A stenographer will be on hand to record verbal comments. Written comments can also be submitted through the duration of the public comment period.

¹ Paragraph 92 of the 2020 BPSOU Consent Decree states that any change to the soil, dust and/or vapor cleanup levels set forth in the 2006 ROD "may only be lawfully required under a ROD amendment."

² EPA is not planning on issuing a responsiveness summary on the 2024 Proposed Plan but welcomes submittal of previously submitted comments.

- Description of the scope and role of the BPSOU (page 5).
- Summary of Superfund Site risks associated with the BPSOU (page 10).
- Review of the remedial action objectives (RAOs) that pertain to residential soil and interior dust (page 12).
- Explanation of the EPA's 2025 Lead Directive (page 12).
- Review of how the 2025 Lead Directive is incorporated in changing the BPSOU lead cleanup level for residential soil and interior dust and incorporating layers of protection to achieve protectiveness (page 13).
- Description of the proposed changes to the Selected Remedy for the BPSOU (page 14).
- Summary of remedy changes over time specific to lead in residential soil and interior dust (page 19).
- Evaluation of proposed changes specific to lead in residential soil and interior dust (page 20).
- Protectiveness summary (page 23).
- Key documents included in the administrative record file (page 23).
- Information on community engagement and how to participate in the public comment process (pages 24).

Site History and Background

The Superfund Site is in and around Butte, Montana, and includes 26 miles of stream and streamside habitat downstream from Butte. Since the late 1800s, mining wastes have been dumped into areas in and around Butte, as well as into streams and wetlands near mining operations. Meanwhile, historic mining, milling, and smelting activities contaminated soil, groundwater, and surface water with arsenic and heavy metals.

In 1982, the EPA proposed that Silver Bow Creek be added to the National Priority List (NPL), and it was listed as a Superfund site in 1983. The Butte Area was added to the Silver Bow Creek Site in 1987. The EPA divided the "Silver Bow Creek/Butte Area" Superfund Site into operable units (OUs) based on common characteristics and conditions to optimize investigation, evaluation and cleanup. Over time, some of the originally defined OUs have been incorporated into the following, current OUs, shown in Figure 1:

- OU1 – Streamside Tailings – cleanup performed under a remedy selected in 1995;
- OU3 – Butte Mine Flooding – cleanup is ongoing under a remedy selected in 1994;
- OU4 and OU12 – Warm Springs Ponds – cleanup is ongoing under an interim remedy selected in 1990;
- OU7 – Rocker Timber Framing – cleanup is ongoing under a remedy selected in 1995;
- OU8 – Butte Priority Soils – cleanup is ongoing under a remedy selected in 2006;
- OU13 – West Side Soil is in the remedial investigation phase; a remedy has not yet been selected.

The BPSOU (OU8) is centered on the "Butte Hill," the location of the historic Butte Mining District (shown in Figure 2). It is approximately five square miles, and incorporates the Town of Walkerville, part of Butte north of Silver Bow Creek and west of the Berkeley Pit, and a section of land that extends south from Silver Bow Creek to Timber Butte. It includes the alluvial aquifer impacted by the BPSOU surface contamination, the surface water in Silver Bow Creek below its confluence with Blacktail Creek, and a portion of Blacktail Creek. The BPSOU portion of Blacktail Creek starts at the confluence of Grove Gulch Creek and extends downstream to the confluence of Silver Bow Creek. Any part of Blacktail Creek upgradient of (above) Grove Gulch Creek is a part of OU13 (West Side Soil OU). The BPSOU is in a predominantly urban setting, which includes residential neighborhoods, schools and parks, as well as commercial and industrial areas. Extensive underground mining, milling, and mineral processing over many decades resulted in widespread distribution of mine waste such as waste rock, mill tailings, and slag. Mine wastes impacted soil, interior dust, groundwater and surface water throughout the BPSOU and became the focus of the environmental cleanup ongoing today.

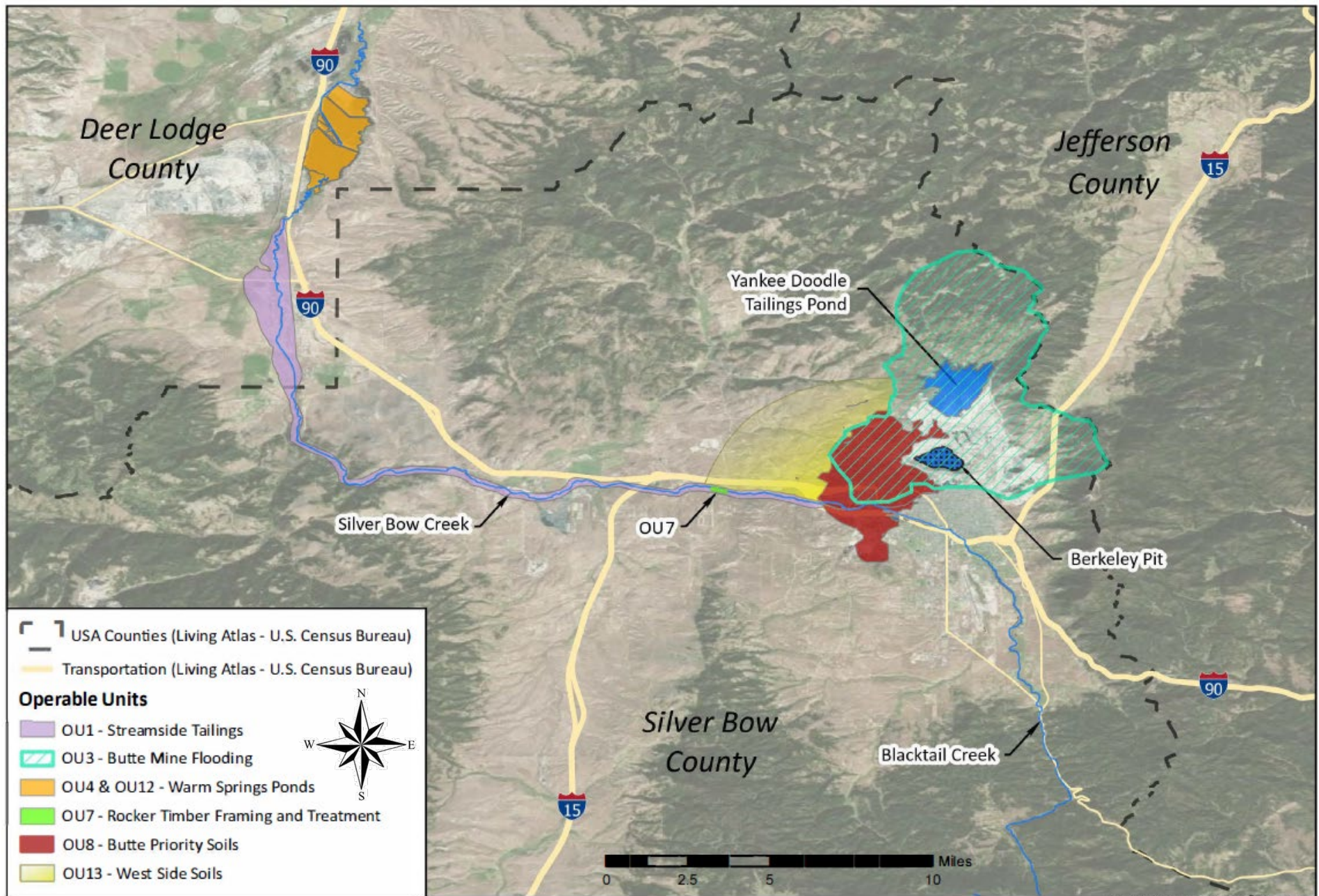


Figure 1 - Site Operable Units (OUs)



Figure 2 - Butte Priority Soils Operable Unit (BPSOU)

Scope and Role of the Butte Priority Soils Operable Unit

Contaminants found within the BPSOU, including arsenic and heavy metals such as copper, lead, mercury and zinc, are the result of 120 years of hard rock mining, smelting, milling and other processing activities. Sources of ongoing contamination have been identified and include waste rock piles, mill tailings deposits, slag and railroad beds. Many homes in Butte were built near former mines and mineral processing facilities while some were built directly on top of mine wastes.

Early investigations included residential soil sampling, and subsequent investigations characterized the soil and mine wastes in residential, commercial and industrial areas of the BPSOU. The early investigations focused on Walkerville and portions of Butte where historical mining activities were more intensive and where metal levels were expected to be higher than in other residential areas of Butte. The results from the initial investigations informed the BPSOU remedial investigation and delineation of areas with elevated metal content.

The EPA began work within the BPSOU in 1987, starting with strategic removals to address immediate risks to human health and the environment. Nine time-critical removal actions and four expedited response actions (non-time critical removal actions) addressed contamination between 1988 and 2005 to clean up areas around former smelter sites, mine waste dumps, railroad beds, stream banks and channels, and residential yards in Butte and Walkerville. This work was prioritized to address the most significant exposure pathways and to stop the migration of contamination from the source areas. As a result of the human health risk assessments from the early 1990s, early cleanups (non-time critical removal actions) were completed to address residential areas with lead concentrations greater than 1,200 milligrams per kilogram (mg/kg), a level determined to protect the most vulnerable potential residents including children under six years old, pregnant women and nursing mothers. Initial residential cleanups were completed under the original Butte-Silver Bow Lead Intervention and Abatement Program, which was a multi-pathway protocol for identifying residential properties for lead cleanup. The multi-pathway protocol considered lead-contaminated soil and the presence of other sources of lead associated with residential properties, such as lead-based paint.

Work to Address Multiple Lead Sources at the BPSOU

Residential cleanups have addressed multiple lead sources at BPSOU for decades, including:

- Testing and removal of lead-contaminated soil from yards;
- Testing and cleanup of earthen basements;
- Testing, source identification, and removal of contaminated interior dust (attic and interior living spaces);
- Testing of lead-based paint when an elevated blood-lead level has been identified and, where necessary, remediation; and
- Testing of lead in tap water when an elevated blood-lead level has been identified.

The remedial investigation and feasibility study activities began in the 1990s and were completed in 2005, with the EPA signing the ROD in 2006. Remedial design and construction began in 2006 and continue to the present, including the collection and evaluation of significant amounts of data from residential properties. The 2006 remedial action selected for residential soil and interior dust³ included the following:

- Define residential cleanup levels for contaminants of concern as: 1,200 mg/kg for lead, 250 mg/kg for arsenic, and 147 mg/kg for mercury.
- Implement the BPSOU Residential Metals Abatement Program (RMAP), which uses a multi-pathway approach for mitigating residential exposure. The RMAP addresses potential sources of lead, arsenic, and/or mercury exposure from residential yard soil, interior dust (including both living space and attic dust), interior and/or exterior lead-based paint and lead in drinking water from pipe solder. In addition, the program uses community education in conjunction with medical monitoring to target affected individuals and those groups most at-risk if exposed to lead and/or arsenic. The program prioritizes sampling and remediation in locations where high-risk groups live.

³ The conceptual site exposure model in the 2006 ROD identified a “significant human health exposure pathway” to residents due to the ingestion of interior dust, attic dust (where there is an exposure pathway), and surface soil. The Selected Remedy was chosen to address the human health exposure pathway in residential solid media, specifically defined as contaminated soil and interior dust (including both living space and attic dust).

- Sample residential soil, at a minimum, from the 0- to 2-inch depth interval within decision units (e.g., front yard, back yard, play area, driveway, etc.).
- Excavate, remove and replace soil to a minimum depth of 18 inches in those decision units exceeding the cleanup levels. Other materials, such as road base, gravel, etc., will be used as replacement material where appropriate (e.g., driveways, walkways, etc.). Excavated soil will be transported to the Butte Mine Waste Repository.
- Excavate, remove and replace to a depth of 24 inches in gardens that could be used to grow vegetables for human consumption. Excavated soil will be transported to the Butte Mine Waste Repository.
- Install a lightweight geotextile marker fabric at the base of excavation prior to placement of clean⁴ soil cover to indicate that the underlying soil may contain lead, arsenic and/or mercury above the cleanup levels.
- Remove and replace contaminated soil in all accessible areas; inaccessible soil under buildings, paved areas, etc., will not be sampled or removed.
- Implement all sampling and remediation activities under a Residential Access Agreement approved by the EPA.
- Sample all residential properties within the current BPSOU boundary and evaluate for remediation based on the sample results.
- Implement institutional controls (ICs) where necessary, in coordination with the Butte-Silver Bow County (BSB), including:
 - County zoning and permitting to ensure capped waste areas and discrete areas of waste left in place are not disturbed, mismanaged, or inappropriately developed. Waste taken from areas subject to County zoning and permitting will be taken to the Butte Mine Waste Repository.
 - Deed notices will be required for all areas where wastes are capped and left in place or where engineered controls are constructed or other discrete wastes are left in place. Deed notices notify current and subsequent landowners of the presence of these wastes or engineered controls, to ensure that these wastes are not disturbed. Fencing and signs may be required to ensure the integrity of caps and engineered controls.

Since the 2006 ROD, the Selected Remedy has been modified twice. The prior changes to the Selected Remedy specific to residential soil and interior dust include:

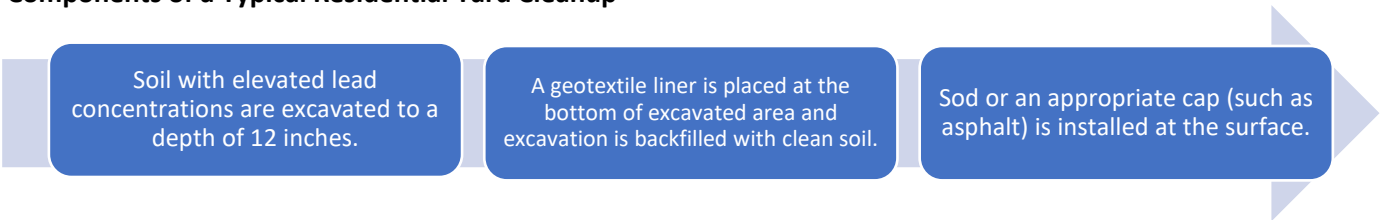
- While the RMAP area has been modified over time, as shown in Figure 3 below, the RMAP expansions in 2011 and 2020⁵ did not alter the current boundary of the BPSOU established in 2006.
 - In the 2011 ESD, the EPA expanded the RMAP area for additional attic-dust cleanups; this area is shaded in pink and labeled as the 2011 RMAP Attics Expansion Area in Figure 3 below, southeast and west of the current BPSOU boundary.
 - In the 2020 RODA, the EPA expanded the RMAP area again for additional residential soil sampling and cleanups. This area is shown by the green perimeter and labeled as the 2019 RMAP Expansion Area in Figure 3. The 2020 RODA specifically noted that residential soil outside the current BPSOU boundary (red perimeter line) but within the 2019 RMAP Expansion Area (green perimeter line) would only be sampled on an as-requested basis. The 2019 RMAP Expansion Area includes rural residential development to the north, south and west. Soil cleanup activities in the 2019 RMAP Expansion Area are conducted in the same manner as actions within the BPSOU.
- The 2011 ESD documented that additional time would be needed to complete the sampling and remediation of contaminated residential properties.
- The 2011 ESD modified the sampling protocol for residential soil to include sampling from 0- to 2-inch depth interval, 2- to 6-inch depth interval, and 6- to 12-inch depth interval.

⁴ Clean soil used to backfill an excavation of contaminated material at a residential property must meet specific, defined criteria for metals and other soil properties, defined in the *Butte Hill Revegetation Specification*.

⁵ Note: The "2019 RMAP Expansion Area," as shown in Figure 3, was not implemented until the 2020 RODA was issued.

- The 2011 ESD modified the Selected Remedy to excavate, remove and replace soil to a minimum depth of 12 inches in those decision units exceeding the cleanup levels, or at a minimum to the soil/bedrock interface.

Components of a Typical Residential Yard Cleanup



As of January 1, 2026, approximately 660 residential properties have had remediation of residential soil, approximately 60 residential properties have had remediation of earthen basements, and approximately 1,300 residential properties have had remediation of interior dust 2019 RMAP Expansion Area. This includes remediation work completed by removal actions, the Butte Lead Intervention and Abatement Program, and the RMAP. Residential soil includes schools, parks, playgrounds, and daycares where young children frequently play and could be exposed to lead and other metals in soil. Cleanup of residential soil and interior dust is ongoing.

A review of the BPSOU's enforcement activity history is included across the 2006 ROD, 2011 ESD, and 2020 RODA. As relevant to the proposed changes to the BPSOU Selected Remedy presented in this 2026 Proposed Plan, in 2011 the EPA issued a Unilateral Administrative Order (2011 UAO) (EPA Docket No. CERCLA-08-2011-0011) in part directing Atlantic Richfield and Butte-Silver Bow County to implement a 2010 RMAP Plan, which contained a 1,200 mg/kg residential cleanup level for lead. In June 2020, the EPA entered a Consent Decree (2020 CD) (Civil Action No. CV 89-039-BU-SEH) with Atlantic Richfield, Butte-Silver Bow County and the state of Montana requiring implementation of the BPSOU Selected Remedy, including certain obligations under the 2011 UAO. While not included in the 2020 BPSOU CD, the RMAP obligations of Atlantic Richfield and BSB remained in effect under the 2011 UAO. Finally, in August 2020, the 2011 UAO was amended (2020 UAO Amendment) (EPA Docket No. CERCLA-08-2011-0011). The 2020 UAO Amendment directed Atlantic Richfield and Butte Silver Bow County to develop and implement the expanded RMAP and medical monitoring consistent with the 2020 RODA for the BPSOU. The 2020 UAO Amendment also incorporated schools, parks, playgrounds, and daycare facilities into the RMAP.

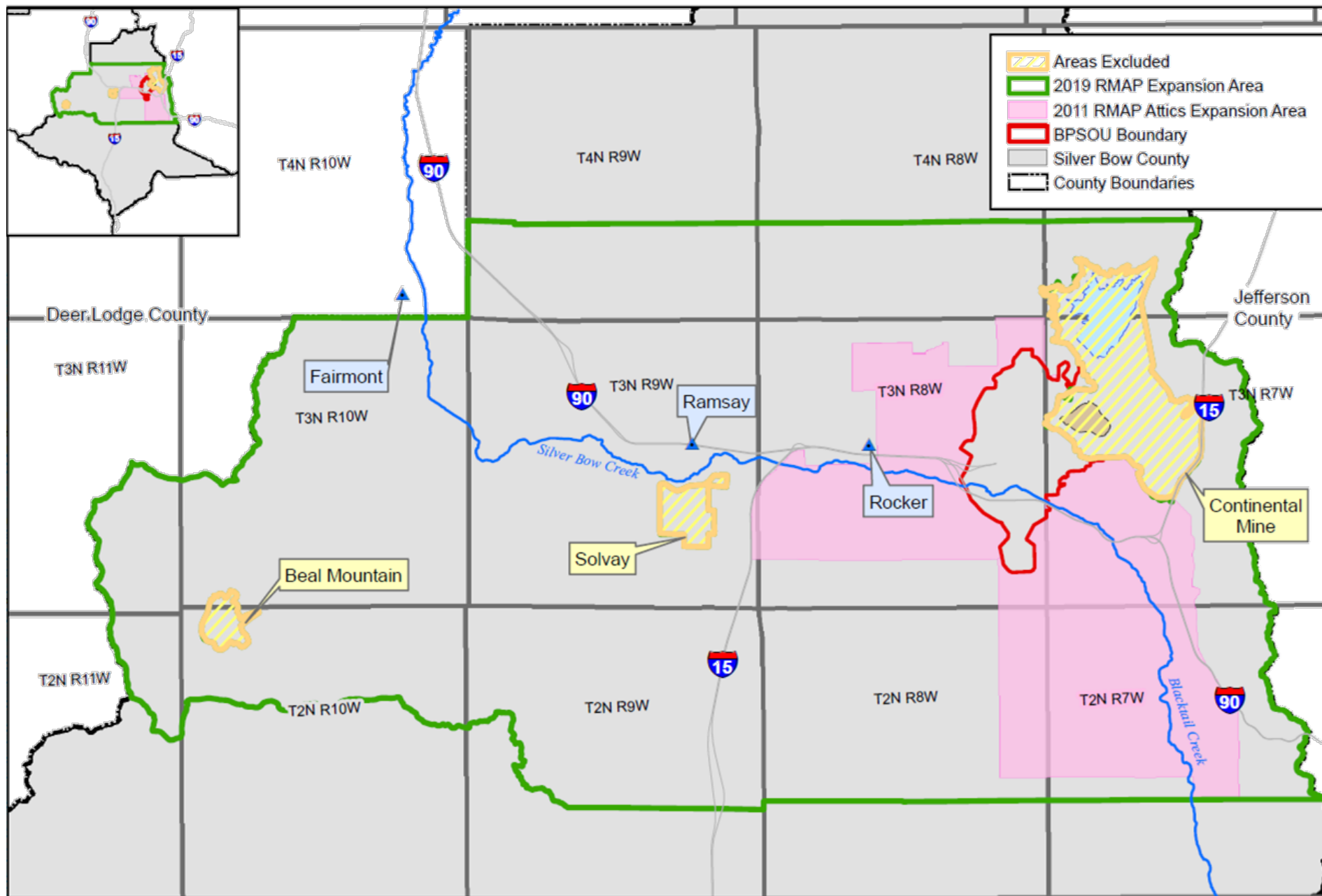


Figure 3 – Residential Metals Abatement Program (RMAP) Changes Over Time

Outcomes of the Early Actions and the Residential Metals Abatement Program

While the early response actions addressed human health risks known at the time, given updated science showing adverse effects at lower levels of lead exposure, mine waste in the BPSOU continues to threaten human health and the environment. The EPA's Selected Remedy built on early successes to eliminate or mitigate remaining human health risks. The RMAP was established to conduct sampling and cleanups using a multi-pathway approach that addresses contamination in residential soil and interior dust.⁶

As part of the RMAP, blood lead screening is available to all county residents at no charge through the Butte-Silver Bow Health Department and in coordination with the Women, Infants, Children (WIC) Program. When blood lead monitoring shows a person has an elevated blood lead level, the Butte-Silver Bow Health Department refers the affected resident (or the guardian of the child resident) to the RMAP to test for lead in interior and/or exterior paint and household drinking water, in addition to the evaluation of soil and interior dust. The Butte-Silver Bow Health Department provides additional education to the resident (or the guardian of the child resident) regarding ways to limit exposure to lead and arsenic from soil, dust, paint, and pipes.

Blood lead monitoring results are summarized in a comprehensive report to the public every five years. Two reports have been issued to date, with a third currently being finalized:

- [*Butte Priority Soils Operable Unit, Public Health Study*](#), Phase 1, July 2014.
- [*Second Butte RMAP Medical Monitoring Study \(Phase 2\) Report*](#), March 2020.
- *Third Butte RMAP Biomonitoring (Phase 3) Report – Draft Final*, May 2026.

Three additional reports are scheduled between now and 2039. Highlights of the previous reports include:

- A national-scale program has monitored the levels of lead in the blood of children since the 1970s. During this time, many sources of lead exposure have been markedly reduced, mainly due to the ban on leaded gasoline and lead-based paint and due to corrosion improvements in drinking water systems. Between 1976 and 1980, average blood lead levels in young children in the U.S. were about 15 micrograms per deciliter (µg/dL) but are now generally less than 1 µg/dL.
- Consistent with national results, blood lead levels have decreased in Butte since 2002, but the rate of decrease is leveling out according to the most recent data.
- The Phase 1 report (2003-2011) showed dramatic decreases in blood lead levels in Butte over the study period. The frequency of blood lead levels exceeding 10 µg/dL (the Centers for Disease Control and Prevention [CDC] threshold at the time of the study) for Butte children decreased from 34% in 2003 to 10% in 2010. The rate of decline in Butte was even greater than what was observed nationally, but some parts of Butte still had more children with elevated blood lead levels than expected.
- The Phase 2 report (2012-2017) showed the rate of decline in blood lead levels in Butte began to slow over the study period. The frequency of blood lead levels exceeding 5 µg/dL (the lower CDC reference value at the time of the study) decreased to about 5% in 2017. Higher rates of elevated blood lead levels were observed in Uptown Butte compared to the neighborhoods at the bottom of the Butte hill (also referred to as the “Flats”) and higher rates were also found in the warmer months when children are more likely to contact soil while playing outside.
- The Phase 3 report (2018-2024) does not show continuing declines in blood lead levels in Butte. This study is limited by several factors, including the fewer number of blood lead tests performed (due in part to the COVID-19 pandemic), the ability of blood lead testing equipment to reliably detect blood lead levels below 3.5 µg/dL (the

Blood Lead Monitoring

Blood lead levels for Butte children have decreased over time, but they are still elevated relative to national levels. The medical monitoring program, based on the CDC reference value (>3.5 µg/dL), identifies about a dozen elevated blood lead levels each year.



⁶ The conceptual site exposure model in the 2006 ROD identified a “significant human health exposure pathway” to residents due to the ingestion of interior dust, attic dust (where there is an exposure pathway), and surface soil. The Selected Remedy was chosen to address the human health exposure pathway in residential solid media, specifically defined as contaminated soil and interior dust (including both living space and attic dust).

current CDC reference value), and the discrepancies associated with fingerstick tests compared to venous confirmation samples. Despite these limitations, this study shows higher rates of elevated blood lead levels in children residing in older housing and in Uptown Butte compared to the Flats, but seasonal differences were no longer apparent.

- Higher rates of elevated blood lead levels in Butte cannot be attributed solely to mine waste. The most prevalent remaining risk factor for lead exposure in Butte children is living in an older home with lead-based paint. More than 80% of Butte houses were built before 1960, which is the timeframe when lead-based paint use was common.

Summary of Site Risks

The Selected Remedy identifies the BPSOU contaminants of concern for residential soil and interior dust to be lead, arsenic, and mercury. At the Superfund Site, mining and ore-processing wastes are the primary sources of these contaminants of concern and can be found in different forms (e.g., waste rock, mill tailings, fallout, slag, and mixed combinations). As per the Site Conceptual Exposure Model in the 2006 ROD (figure 5-24), the primary routes of movement of these contaminants include runoff, infiltration, percolation, deposition, track-in, wind transport, and wind erosion. Lead, arsenic, and mercury can also occur naturally in the soil. Lead, in particular, can be present in soil because of human-caused source contributions, including those that are mining-related and those that are not mining-related, like leaded gasoline and lead-based paint. Lead exposure from multiple sources can increase the risk to children.

Human Health Exposures

Superfund Site cleanup decisions for residential land use are based on the most sensitive receptors (children less than 6 years old). The primary exposure pathways at the BPSOU relevant to residential soil and interior dust for both adult and child residents are:

- Incidental ingestion of surface soil, and
- Incidental ingestion of interior dust, including attic dust when an attic space is accessible.

Sources of interior dust addressed in the BPSOU may include tracked-in exterior soil and interior dust (including attic dust) originating from historic mining and smelting activities. While people typically do not intentionally eat soil or dust, particles of soil or dust can stick to hands and be ingested. A secondary exposure pathway is inhalation of airborne dust particles released from soil into the air by wind or soil-disturbing activities.

Risk Assessments

The 1991 Preliminary Baseline Risk Assessment used data from the 1988 *Butte Soil Screening Study* to identify contaminants at the BPSOU that may pose significant human health risks. The EPA then conducted additional human health risk assessments focused on lead, arsenic, and mercury exposure scenarios, including:

- 1994 *Baseline Human Health Risk Assessment for Lead*
- 1997 *Baseline Human Health Risk Assessment for Arsenic*
- 2003 *Human Health Risk Assessment for the Walkerville Residential Site*

For the BPSOU residential soil, the primary contaminant driving cleanup is lead.⁷ Lead can cause adverse health effects, such as anemia, behavioral problems, and cognitive difficulties. Risks of health effects from elevated lead levels is greatest for young children and the developing fetus because those populations are more susceptible to the effect of lead than are older children and adults.

⁷ Note: Often lead and arsenic are located together. Where a decision unit is remediated for lead, such remediation would also remediate for arsenic.

Additional reasons to focus on these populations include:

- Young children typically have higher exposures to lead contamination because they do not always have the same level of hygiene as adults (e.g., consistent hand-washing) and tend to put their fingers in their mouth.
- Young children and the developing fetus typically absorb lead into their bloodstream faster than older children and adults.
- The developing bodies of young children and fetuses are more susceptible to the effects of lead than those of older children or adults.

The EPA's Integrated Exposure Uptake Biokinetic (IEUBK) model is applied in Superfund risk assessment processes to develop a risk-based preliminary remediation goal (PRG), which can be evaluated as a potential cleanup level. The IEUBK model is applied to estimate the likelihood that a hypothetical child would have a blood lead level greater than a specified target. Version 1 (v1.0) of the IEUBK model was used in 1994 for the BPSOU to predict blood lead levels from environmental exposure to lead and derive a soil lead concentration that corresponds to a target blood lead level taking into consideration site-specific model inputs and adjustments (like bioavailability – the ability of a substance to be absorbed and used by the body). Consistent with the EPA's risk assessment guidance at the time (1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities), the baseline human health risk assessment for lead used a blood lead level target of 10 µg/dL.⁸

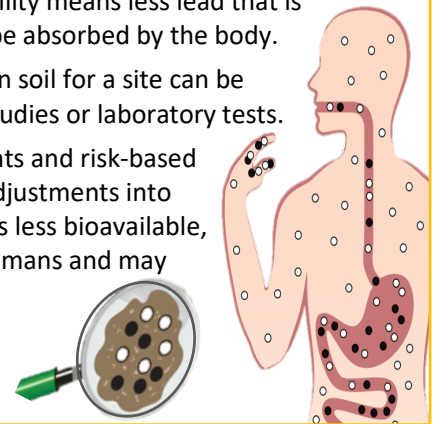
In the IEUBK v1.0 risk calculations, a site-specific adjustment was included to account for the fact that the lead in Butte soil is less bioavailable than in other lead-contaminated sites. Lead bioavailability is explained in the text to the right. In Butte, the site-specific bioavailability for lead in soil is 12%, which is about three times lower than the EPA default value of 30%. The more conservative default lead bioavailability value for interior dust (30%) was used to account for the potential for dust to contain lead from both Site-related soil and from more bioavailable lead-based paint. In 1994 the EPA used the IEUBK v1.0 model with site-specific values for mass fraction of interindividual geometric standard deviation (GSDi), soil to dust (MSD), and bioavailability to derive a BPSOU-specific lead cleanup level for residential soil and interior dust of 1,200 mg/kg.

In 2003, the EPA completed a human health risk assessment for Walkerville that evaluated potential human health risks to children and adults from exposure to arsenic, lead, and mercury in outdoor soil, basement soil, interior dust, attic dust, and mercury vapor. In general, metals concentrations were highest in attic dust or basement soil, lower in outdoor soil, and lowest in interior living area dust. Because attics are not usually living spaces and typically are infrequently accessed by residents, the EPA determined that there is not always a complete attic dust exposure pathway.⁹

Bioavailability is a vital part of determining risk from lead. Some important things to know about bioavailability are:

- Bioavailability is a measure of what part of a swallowed chemical dose enters the bloodstream.
- Lead is present in many chemical forms in soil depending on its source. Some forms are more bioavailable than others. Lead-based paint is typically more bioavailable than lead in soil.
- After lead-contaminated soil is swallowed, bioavailable forms of lead are absorbed into the body, and processed or stored.
- Lead with lower bioavailability means less lead that is swallowed or inhaled will be absorbed by the body.
- The bioavailability of lead in soil for a site can be determined from animal studies or laboratory tests.
- Site-specific risk assessments and risk-based PRGs take bioavailability adjustments into account. If the lead in soil is less bioavailable, then it poses less risk to humans and may result in a higher PRG.

- **Non-bioavailable lead**
- **Bioavailable lead**



⁸ 1994 EPA. Memorandum: OSWER Directive: Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive #9355.4-12. Office of Solid Waste and Emergency Response. August 1994.

⁹ If a clear exposure pathway to an attic space is identified where the cleanup level for lead or arsenic is exceeded, the attic dust is remediated.

Remedial Action Objectives

Remedial Action Objectives (RAOs) state the goals of a final remedial action. The RAOs identified in the 2006 ROD for contaminated solid media¹⁰ specific to residential soil and interior dust for human health are to:

- Prevent the ingestion of, direct contact with, and inhalation of, contaminated soil, interior dust, waste rock, and/or tailings or other process waste that would result in an unacceptable risk to human health from site-related contamination assuming current or reasonably anticipated future land uses.
- Remediate contaminated solid media to the extent that it will not result in an unacceptable risk to human health and/or aquatic environmental receptors from site-related contamination.

This 2026 Proposed Plan for the residential soil and interior dust remedy component does not change the RAOs presented in the 2006 ROD.

EPA's Residential Lead Directive

After the EPA selects a remedy in a ROD, new information may be identified that could affect the implementation or long-term protectiveness of the Selected Remedy. In this case, EPA updated the *Superfund Residential Lead Sites Handbook* and the [Integrated Science Assessment for Lead](#) on February 7, 2024. Based on updated science, on October 16, 2025, the EPA issued the [Residential Lead Directive for CERCLA Sites and RCRA Hazardous Waste Cleanup Program Facilities](#) ("2025 Lead Directive"). Collectively, these documents reflect updated science showing adverse effects from lead exposure and provide recommendations, which prompted the EPA to re-evaluate the previously selected residential lead cleanup level of 1,200 mg/kg for the BPSOU.

Given the requirement that remedial actions be protective of human health and the environment, it is essential that new information or changed conditions be effectively evaluated for impacts on human health and the environment at the Superfund Site.

The EPA's review of the scientific literature has shown that health effects from lead exposure can occur when blood lead levels are below the 1994 Lead Guidance's threshold of 10 µg/dL referenced in setting the residential soil and interior dust cleanup levels in the 2006 ROD. The 2025 Lead Directive decreases the target blood lead level the EPA uses to develop a risk-based PRG for residential soil from 10 µg/dL to 5 µg/dL. The 2025 Lead Directive also establishes a residential soil RSL for lead of 200 mg/kg. RSLs are used during initial site screening to define areas that need further evaluation. However, RSLs are not Superfund cleanup levels. Lastly, the 2025 Lead Directive recognizes that layers of protection, such as institutional controls and informational devices, enhance the effectiveness of response actions.

Defining Residential Soil

The 2025 Lead Directive defines residential properties as any area with high or unrestricted accessibility to sensitive populations (specifically young children) and includes, but is not limited to:

- properties containing single- and multi-family dwellings,
- apartment complexes,
- vacant lots in residential areas,
- schools, day-care centers,
- community centers,
- playgrounds, parks, recreational areas, green ways, and any other areas where young children may be exposed to site-related contaminated media.

The target blood lead level established in the 2025 Lead Directive is 5 µg/dL. The target blood lead level is used to derive a risk-based PRG for lead in soil by applying the IEUBK model.¹¹ Risk-based PRGs take into account site-specific information, like soil lead bioavailability, and inform the soil cleanup levels. The EPA applies a target blood lead level (5 µg/dL) as a regulatory trigger for action based on population risk rather than a threshold for individual health. While the EPA acknowledges there is no known safe level of lead in blood, the 5 µg/dL blood lead target is used to prioritize resources to protect children from the highest, most immediate hazards addressable under CERCLA. The EPA will

¹⁰ The Selected Remedy documents residential soil and interior dust as "Residential Contaminated Solid Media in the form of contaminated residential soil and interior residential dust."

¹¹ This process is outlined in the EPA's *Superfund Residential Lead Sites Handbook*, most recently updated in March 2024. The IEUBK model is the only model approved for Superfund human health risk-assessments for young children.

continue to work with the Butte-Silver Bow Health Department and WIC to prioritize the sampling of those residences where there is a resident with an elevated blood lead level.

The proposed changes in this 2026 Proposed Plan only modify the component of the Selected Remedy that addresses contaminated residential soil¹² and interior dust, consistent with the new blood lead target established in EPA's 2025 Lead Directive, to ensure protection of human health and the environment within the BPSOU.

Revising the Lead Cleanup Level for Residential Soil and Interior Dust

As outlined in the 2025 Lead Directive, EPA's national lead policy specifies a target children's blood lead level of 5 µg/dL to develop PRGs. As discussed above, the blood lead monitoring data in Butte shows that blood lead levels for children have gone. Even so, the BPSOU residential soil lead cleanup level of 1,200 mg/kg was based on a target blood lead level of 10 µg/dL in children, which can no longer be viewed as protective, based on the EPA's review of current scientific literature referenced in the 2025 Lead Directive. For the remedy to be protective, the residential soil cleanup level is being revised to meet the lower target blood lead level set forth in the 2025 Lead Directive.

The EPA calculated a new risk-based PRG for lead in Butte residential soil and interior dust using the current EPA version (v2.0) of the IEUBK model. The site-specific model inputs of the MSD, GSDi and bioavailability adjustments used to develop the original lead risk-based PRG in the 1990s were also used to calculate the revised risk-based PRG; these model inputs and adjustments are still relevant site-specific information. The 2025 Lead Directive recommends a 5 µg/dL target blood lead level. Incorporating site-specific MSD, GSDi, and bioavailability, the risk-based PRG value result determined from the IEUBK model at 5 µg/dL is 456 mg/kg lead for residential soil and interior dust.¹³ In proposing the new lead cleanup level for residential soil and interior dust, the EPA considered the risk-based PRG of 456 mg/kg, as well as information on local background concentrations of lead. Soil background is the term used to describe the ambient or typical presence of a particular constituent (here, lead) in a defined area. Lead can occur naturally in the environment, in forms that have not been influenced by human activity. Lead can also be found in an urban environment, influenced both by naturally occurring lead levels in the soil and from human-made sources, including lead-based paint and leaded gasoline. Within the BPSOU, it is important to understand the known presence of lead in soil both as they occur in the geology of the area and also from the effects of an urban environment. The EPA has determined that naturally occurring background lead in Butte, Montana ranges from concentrations of 15 to 20 mg/kg.¹⁴ Through an updated statistical analysis of urban (or anthropogenic) impacts from human-made sources, the EPA anticipates urban background lead concentrations in Butte are between 115 mg/kg and 315 mg/kg.¹⁵

Because the EPA generally does not establish cleanup levels lower than background concentrations, the EPA reviewed soil data in several studies to determine whether both naturally occurring and urban background concentrations of lead in soil within the BPSOU are below the calculated PRG value of 456 mg/kg. As stated above, the EPA determined that both naturally occurring and urban background concentrations of lead in soil within the BPSOU are below the calculated PRG value of 456 mg/kg. Therefore, the proposed cleanup level for lead in residential soil and interior dust is the PRG value of 456 mg/kg; the final cleanup level will be selected in the RODA.

¹² Residential soil will continue to include schools, parks, playgrounds, and daycares where young children play and could be exposed to lead and other metals in soil.

¹³ EPA 2026a. Calculation of Updated Residential Soil Lead Preliminary Remediation Goals for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum, U.S. EPA, March 2026.

¹⁴ EPA 2026b. Summary of Naturally Occurring Background Soil Lead Concentrations for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, April 2026.

¹⁵ EPA 2026c. Anthropogenic Lead Background Source and Concentration Summary for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.

Residential lead concentrations observed at the Superfund Site are highly variable and range from 1 mg/kg to over 50,000 mg/kg for soil and range from 1 mg/kg to over 200,000 mg/kg in dust. Approximately 80% of *residential properties that have been sampled* within the BPSOU have soil lead concentrations above the proposed lead cleanup level, which indicates a potential for unacceptable risk due to Site-related contaminants.

Proposed Changes to the Selected Remedy for the Butte Priority Soils Operable Unit

Based on the revised blood level target established in the EPA's 2025 Lead Directive and the new risk-based PRG, the EPA is proposing three primary changes to the Selected Remedy, which are described in the following sub-sections:

- New Residential Lead Cleanup Level,
- Proposed expansion to the current BPSOU boundary specific to residential soil and interior dust (including both living space and attic dust), and
- Additional Time for Action.

New Residential Lead Cleanup Level

The EPA has incorporated the 2025 Lead Directive to update the risk-based PRG value for the BPSOU and evaluated the presence of lead in background soil to determine the proposed lead cleanup level for the BPSOU, as described in the above section. The proposed BPSOU-specific residential soil and interior-dust¹⁶ cleanup level is set at the PRG value of 456 mg/kg (the existing cleanup level is 1,200 mg/kg, set in the 2006 ROD). The proposed cleanup level will be applied to all residential properties within the expanded RMAP boundary, to include parks, playgrounds, schools, daycares, multi-family housing, and industrial/commercial properties with residences in the building or where the building is being used as a daycare.

Properties where residential cleanup has already been conducted under the Selected Remedy will be reassessed to determine what type(s) of additional action may be required. For example, if a residential property previously only had one portion of the property cleaned up, data collected at the time of the yard sampling will be reviewed to determine if there are other portions of the property where additional action should be taken. Similarly, approximately 1,800 residential properties that were previously sampled but did not qualify for cleanup at the 1,200 mg/kg level will be reassessed to determine if action is now required. Residential properties where action is required will be evaluated to determine how additional excavation and layers of protection, such as institutional controls or informational devices (e.g., notice of environmental contamination) can be used in concert to achieve protectiveness.

Proposed Expansion to the Current BPSOU Boundary

As described in this 2026 Proposed Plan, the RMAP area has been modified over the course of remedy implementation. The Selected Remedy requires that all residential properties within the current BPSOU boundary be evaluated. Sampling of individual residential properties within the 2019 RMAP Expansion Area is completed at the request of a property owner. The current BPSOU boundary was drawn to encompass areas of historic mining activity (except for the Berkeley Pit and active mining areas) with the assumption that the intensity of mining impacts generally diminishes with distance. The likelihood of cleanup level exceedances (i.e., lead soil concentrations greater than 1,200 mg/kg) was expected to be less in areas outside of the current BPSOU boundary. However, the RMAP results described above indicate numerous exceedances of lead and arsenic residential cleanup levels both in residential soil and interior dust beyond the current BPSOU boundary. These exceedances demonstrate that lead and arsenic contamination is not confined to the current BPSOU boundary but extends into the residential areas to the east and south of the BPSOU. The identification of widespread lead and arsenic exceedances outside the BPSOU boundary supports that the current boundary does not

¹⁶ Interior-dust, as indicated in the first paragraph of this 2026 Proposed Plan includes both living space dust and attic dust, when a remediation is deemed necessary due to exposure potential.

fully encompass the extent of residential contamination. These findings imply that sampling residential properties in the south and east neighborhoods on an opt-in basis only is not sufficient to identify and reduce the exposure to lead in these areas.¹⁷

The RMAP sampling program includes both indoor and outdoor assessments (i.e., residential soil, earthen basement soil, indoor dust, attic/crawl space dust, and, in appropriate cases paint, drinking water, and indoor air). Inspection of the RMAP data shows soil and dust concentrations of lead are highly variable, with some residential properties having lead concentrations well above 10,000 mg/kg. To date, more than 75% of residential properties within the BPSOU that have been sampled have soil lead concentrations greater than the proposed lead cleanup level of 456 mg/kg and nearly 90% have interior dust lead concentrations above this level.

While the frequency of soil and dust exceedances for lead tend to be lower in the proposed BPSOU boundary expansion area than within the current BPSOU, there are more than 800 residences in this area that have been sampled under RMAP to date that would require remediation because of lead contamination (based on the proposed lead cleanup level). When lead contamination is encountered in soil, the depth of elevated lead concentrations can vary depending on the source of contamination. At some properties, the depth of contamination is shallow, extending less than 6 inches beneath the surface. At other properties, the surface soil may not exceed the cleanup level, but contamination is encountered at depth.

Arsenic concentrations in soil and dust are also highly variable. In general, arsenic concentrations in soil and indoor dust tend to be lower than concentrations in attic dust. This observation suggests that arsenic in attic dust may be most attributable to historical smelter emissions and not from outdoor soil track-in. About 60% of the residential properties sampled for attic dust in the BPSOU have arsenic concentrations above the 250 mg/kg cleanup level. The frequency of arsenic cleanup level exceedances within the proposed BPSOU boundary expansion area is lower; even so, one-third of the sampled residential properties in the proposed BPSOU boundary expansion area have arsenic concentrations in attic dust above the cleanup level.

To ensure these affected residential properties are evaluated and addressed under the Remedy, an adjustment of the BPSOU boundary is warranted. Accordingly, an expansion of the current BPSOU boundary is recommended to encompass affected residential areas where documented exceedances have been identified to ensure protection of human health, specifically lead and arsenic contamination in residential properties. The proposed BPSOU boundary expansion is based on ongoing residential sampling efforts where residential properties have been sampled and would require action when applying the proposed lead cleanup level (456 mg/kg), and the current cleanup levels for arsenic (250 mg/kg) and mercury (147 mg/kg). This proposed BPSOU boundary expansion pertaining to required characterization under RMAP is shown in purple on Figure 4 and Figure 5. The expanded boundary delineation considered the locations of exceedances, Butte Silver Bow census tract boundaries, and major roads and thoroughfares, with a focus on including older residential neighborhoods.

The EPA anticipates that the proposed lower lead cleanup level of 456 mg/kg will significantly increase the number of residential properties that will be identified for action. The proposed BPSOU boundary expansion is estimated to increase the number of residential properties requiring sampling by approximately 7,100 additional residences. Under the current RMAP, the sampling of soil and indoor dust at residential properties within the proposed BPSOU boundary expansion area was only completed when requested by the property owner. Under this proposed change, the *proactive* sampling and remediation (as appropriate) of outdoor soil, dirt (if earthen basements or crawlspaces are present), indoor dust, and attic dust (if properties are built prior to 1980) at all residential properties within the proposed BPSOU boundary expansion would now be required under the RMAP.

¹⁷ EPA 2026d. Residential Metals Abatement Program (RMAP) Evaluation of the Extent of Contamination for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.

Given the 2025 Lead Directive's blood lead level target, the EPA anticipates that there could be a significant number of people being exposed to lead levels above the proposed lead cleanup level within both the current BPSOU boundary and the proposed BPSOU boundary expansion. The proposed BPSOU boundary expansion, shown on Figures 4 and 5, is being proposed for required sampling, and further action as needed, and may be modified based on information received during the public comment period. The BPSOU boundary expansion will be finalized in a RODA.

Furthermore, the residential properties that fall outside the proposed BPSOU boundary expansion (outside the red and purple outlined area in Figure 4 and Figure 5) and within the 2019 RMAP Expansion Area (green outline on Figure 5), would continue to be sampled upon request with additional action performed if warranted and access is granted.

Additional Time for Action

With the significant estimated number of additional residential properties that may require sampling and evaluation for action, additional time to complete activities will be necessary. This will extend the originally anticipated timeline described in the Selected Remedy. At this time, the EPA proposes sampling of approximately 1,200 residences per year within the current and proposed BPSOU boundary expansion area. For greatest efficiency, sampling and cleanup activities will happen simultaneously; field teams will conduct sampling activities at some residential properties while cleanup at other residential properties is taking place. The EPA anticipates that residential property sampling will occur in the current BPSOU boundary and proposed BPSOU boundary expansion area for 8 years from 2026. The EPA anticipates that any required action under the RMAP in the BPSOU and the proposed BPSOU boundary expansion area will continue for approximately 15 years from 2026.

Sampling and required action will prioritize the most vulnerable populations, including young children, pregnant women and nursing mothers. This sampling and remediation timeline greatly expedites current rates. For work to be completed within these timelines, the EPA will work closely with the RMAP to develop strategies to streamline field work and find efficiencies in the actions taken under RMAP. For example, a targeted neighborhood approach may be appropriate where residential properties within a specific neighborhood could be evaluated in a single season and remediated in a single mobilization.

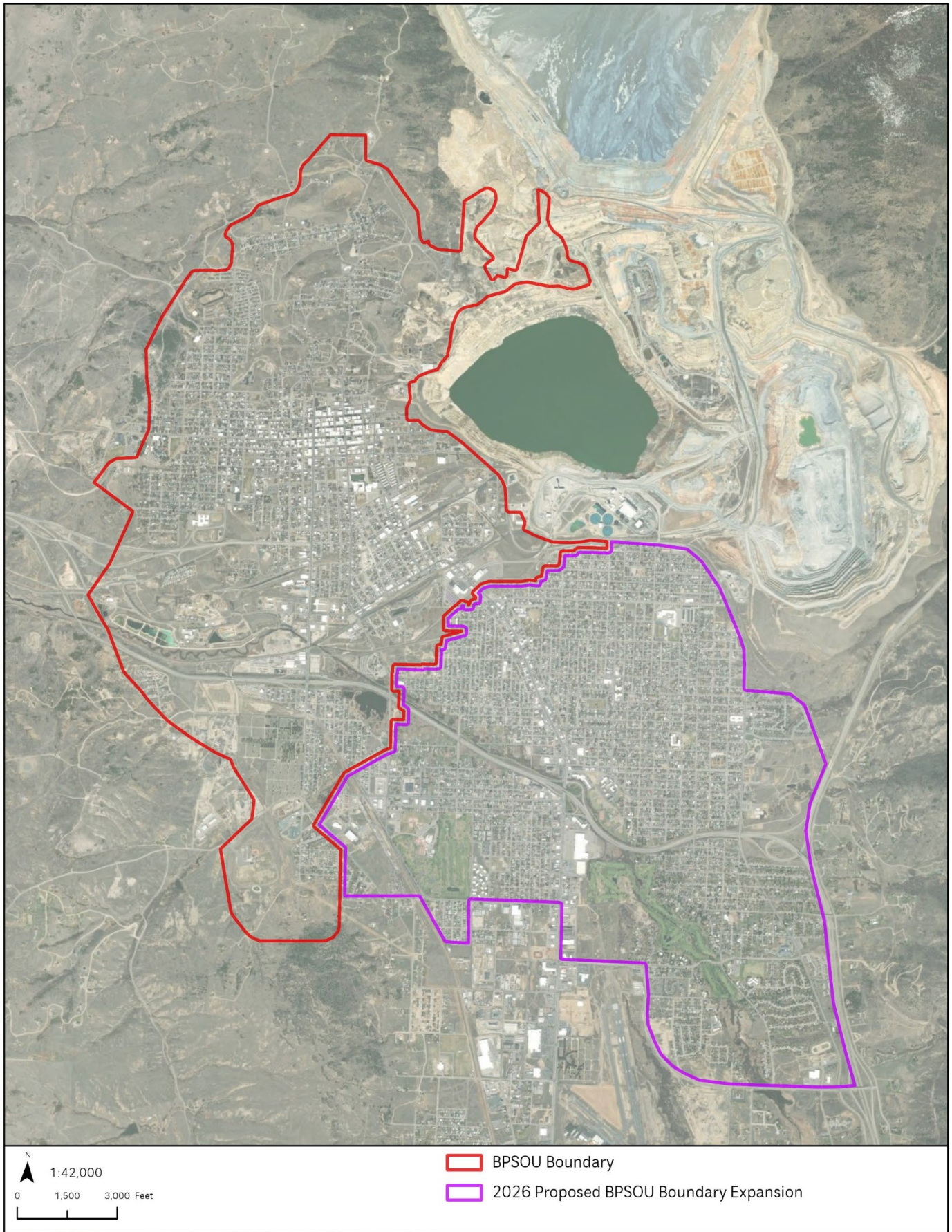


Figure 4 - Current BPSOU Boundary and Proposed BPSOU Boundary Expansion

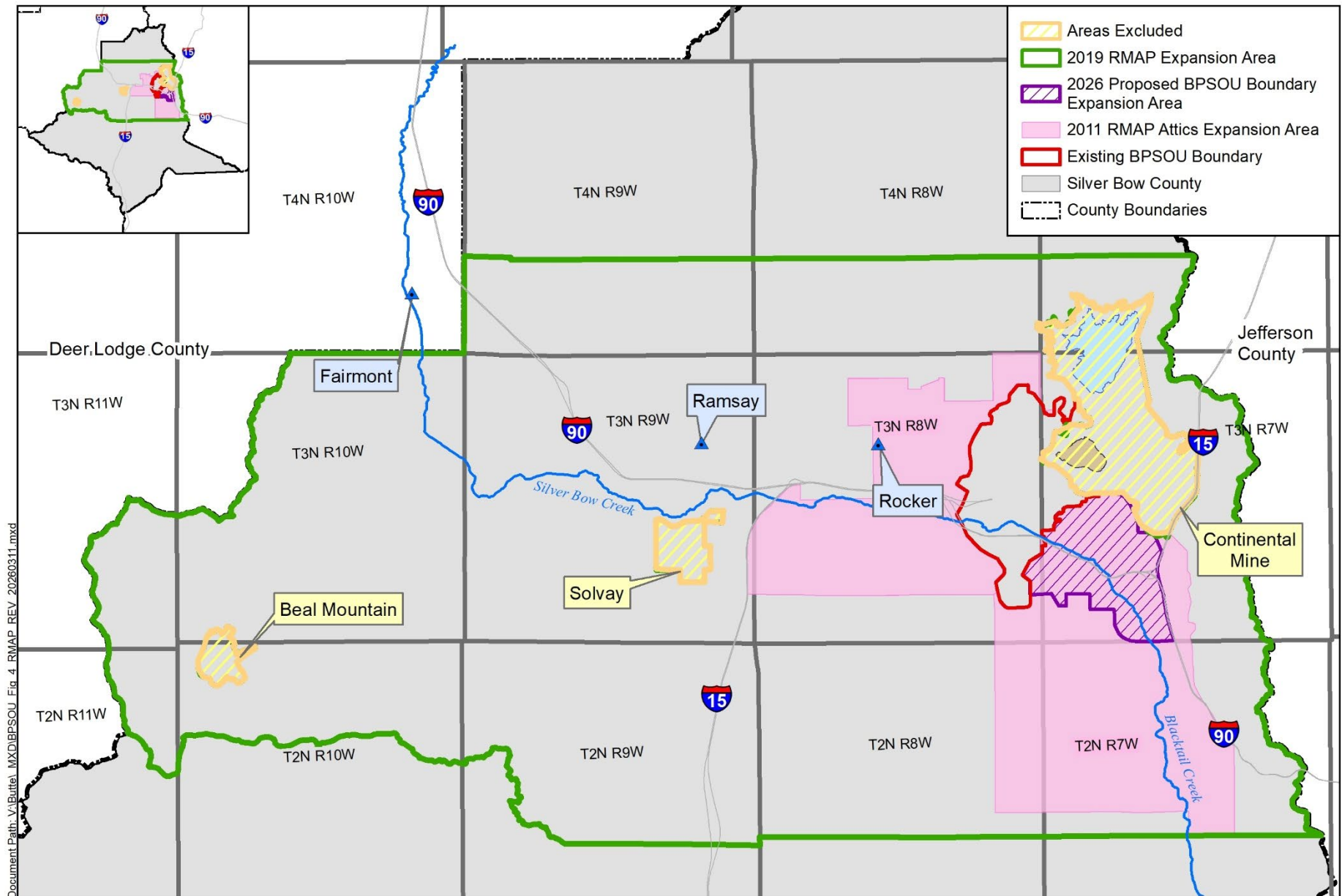
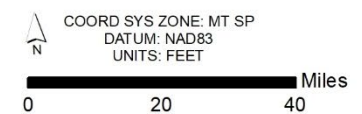


Figure 5 – Proposed BPSOU Boundary Expansion and RMAP Areas



Summary of Remedy Changes for Residential Soil and Interior Dust

The Selected Remedy for residential soil and interior dust is the result of three previous decisions: the 2006 ROD, the 2011 ESD, and the 2020 RODA. The table below provides a summary of the modifications to the ROD in 2006 through the 2011 ESD and the 2020 RODA, and the changes proposed in this 2026 Proposed Plan.

Original 2006 Record of Decision (ROD)	Modification to 2006 ROD by Decision Document Specific to Residential Soil and Interior Dust		
	2011 Explanation of Significant Differences (ESD)	2020 ROD Amendment (RODA)	2026 Proposed Plan (in preparation for a RODA)
- Target blood lead level = 10 µg/dL. - Residential lead cleanup level for residential soil and interior dust = 1,200 mg/kg.	No change.	No change.	- Target blood lead level = 5 µg/dL. - Proposed residential lead cleanup level is 456 mg/kg.
Assess (sample) all BPSOU residential properties in 8 years for residential soil and interior dust. Remediate contaminated residential properties in 15 years. Maintain a Residential Metals Program database that tracks residential property status of implementation for a period of 99 years.	Assess (sample) all BPSOU residential properties in 10 years. Remediate contaminated residential properties in 20 years.	No change.	Assess (sample) all BPSOU residential properties and those within the proposed BPSOU boundary expansion area within 8 years [from 2026] for residential soil and interior dust. - Simultaneously remediate contaminated residential properties in 15 years [from 2026].
- Current BPSOU boundary established. All residential properties within established BPSOU boundary require soil and interior dust sampling and, if warranted, cleanup.	No change.	No change.	BPSOU boundary proposed to expand to require residential soil and interior dust sampling and, if necessary, action will be taken. The proposed BPSOU boundary expansion includes neighborhoods south and east of current BPSOU boundary.
Allows for expansion of RMAP.	RMAP area expanded for required attic evaluation south and west of the BPSOU boundary.	RMAP area expanded access to residential sampling and evaluation for cleanup by request of property owner to urban and rural residential areas outside BPSOU boundary.	No change, see above.
Yard soil sample depth = 0 to 2 inches.	Yard soil sample depth = 0 to 2 inches, 2 to 6 inches, and 6 to 12 inches.	No change.	No change.
Geotextile fabric installed beneath the clean fill to show underlying soil may have contamination above cleanup levels.	No change.	No change.	No change.
Soil removals to a minimum depth of 18 inches. Garden removals to a minimum depth of 24 inches.	Soil removals to a minimum depth of 12 inches or to soil/bedrock interface. No change to garden removals.	No change.	No change.
Deed notices required for contaminated material capped in place. - County zoning, ordinance/permit requirements.	No change.	BPSOU Institutional Control Implementation and Assurance Plan finalized as Appendix E to the 2020 Consent Decree.	Layers of protection may accompany physical cleanup, including institutional controls and educational outreach, when appropriate.

Proposed Changes to the Selected Remedy Evaluation

In this section, the proposed changes are compared to the Selected Remedy (as the “no action alternative”) using the nine Superfund evaluation criteria (40 Code of Federal Regulations [CFR] 300.430 (e)(9)(iii)). “No action” is defined as no adjustment to the Selected Remedy. The Selected Remedy for residential soil and interior dust was evaluated in the 2004 *Phase II Remedial Investigation/Feasibility Study*.¹⁸

In applying the 2025 Lead Directive, the EPA evaluated the IEUBK model results for the BPSOU utilizing a target blood lead level of 5 µg/dL. The proposed changes presented in this document and compared against the Selected Remedy (“no action”) are based on the cleanup level that aligns with the 2025 Lead Directive. The proposed cleanup level is 456 mg/kg for lead in residential soil and interior dust.

The proposed changes to the Selected Remedy must first meet the two threshold criteria outlined in the NCP (40 CFR 300.430 (f)(1)(i)) (See Superfund Remedy Evaluation sidebar at right). The five primary balancing criteria are then used to compare the Selected Remedy to the proposed changes identified in this 2026 Proposed Plan. The EPA will evaluate the two modifying criteria after the public comment period ends and all comments are reviewed because comments are an important indicator of public acceptance.

Threshold Criteria

Overall Protection of Human Health and the Environment

The proposed change to the residential soil and interior dust cleanup level for lead is needed to further reduce peoples’ potential for lead exposures from residential soil and interior dust. By using 5 µg/dL as the updated target blood lead level in the most current IEUBK model, and incorporating site-specific model inputs such as soil lead bioavailability, the resulting site-specific, risk-based PRG for lead in residential soil is 456 mg/kg. The risk-based PRG has been selected as the proposed residential lead cleanup level. The proposed residential lead cleanup level is lower than the previous 1,200 mg/kg cleanup level established by the Selected Remedy. Without the proposed changes (“no action”), the lead cleanup level would remain at 1,200 mg/kg for residential soil and interior dust as defined by the Selected Remedy. The current cleanup level of 1,200 mg/kg is no longer deemed protective based on the EPA’s review of current scientific literature referenced in the 2025 Lead Directive.

This 2026 Proposed Plan also proposes to expand the BPSOU boundary to require sampling and evaluation in additional neighborhoods. Sample results for a subset of the residential properties within the proposed BPSOU boundary expansion area to date indicate approximately 65% of these sampled residential properties have an exceedance of the proposed lead cleanup level (456 mg/kg). The proposed BPSOU boundary expansion would require the sampling and remediation (as appropriate) of residential properties outside the current BPSOU boundary under the RMAP. The EPA will determine how layers of protection, through a

Superfund Remedy Evaluation Criteria

Threshold Criteria

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

Primary Balancing Criteria

- 3. Long-term Effectiveness and Permanence.** What risk remains 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 contaminants, their ability to move, and their volume?
- 5. Short-term Effectiveness.** How much time is needed to construct and implement the remedy, and what are the risks to workers, the community, and the environment during that time?
- 6. Implementability.** What are the technical issues and feasibility of implementation. Are goods and services available?
- 7. Cost.** What are the estimated costs?

Modifying Criteria

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

¹⁸ Butte Priority Soils Operable Unit, PRP Group 2004. Feasibility Study Report, Phase II Remedial Investigation/Feasibility Study, Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Prepared for the PRP Group by McCulley, Frick & Filman Inc. April 2004.

combination of institutional controls, medical monitoring, and community education and outreach, may supplement active remediation. Institutional controls may include land use zoning and excavation ordinances, access easements and restrictive covenants, and informational devices such as notices of environmental contamination and deed notices.

Previously, residential properties within the proposed BPSOU boundary expansion area would only be sampled if a property owner contacted the RMAP for an evaluation of their property. This is not sufficient to identify and reduce the exposure to lead in these areas given that existing RMAP data show there could be about 2,500 residential properties with soil concentrations above the lead and/or arsenic cleanup levels within this expanded area. Requiring sampling of residential soil and interior dust in the proposed BPSOU boundary expansion area is critical to protecting human health in Butte.

Lowering the existing cleanup level for lead in residential soil and interior dust, expanding the BPSOU boundary, and implementing layers of protection via a combination of institutional controls, and medical monitoring and education and outreach will reduce exposure and risks to more people. The proposed remedy will be protective of human health and the environment, once implemented.

Compliance with ARARs

Applicable or relevant and appropriate requirements (ARARs) are existing laws and regulations that help define remedy protectiveness. ARARs are intended to ensure that a Superfund cleanup meets existing regulations and statutory provisions. It should be noted that ARAR waivers may be appropriate under certain site-specific circumstances. The resulting action with the proposed changes and the Selected Remedy will meet the ARARs identified in the Selected Remedy documents (identified within Appendix A to the 2006 ROD). ARARs for this action will be finalized in a RODA.

Balancing Criteria

The proposed changes to the Selected Remedy result in no significant changes to long-term effectiveness and permanence; to reduction of toxicity, mobility, or volume through treatment; or to implementability. Short-term effectiveness and cost are impacted by the number of additional residential properties that will require action.

Long-Term Effectiveness and Permanence

Soil removal (followed by placement of a geotextile marker if underlying soil exceeds cleanup levels, backfill and revegetation or cover) and interior dust remediation is an effective, long-term cleanup method with a long history of success at BPSOU. Additionally, existing institutional controls through a Butte-Silver Bow County Ordinance establish requirements to ensure that capped areas in yards are not disturbed, mismanaged or inappropriately developed. These methods are a major part of the Selected Remedy and have performed well. The remedy remains effective in the long term and is permanent. The proposed changes do not alter the implementation of the Selected Remedy, which has been found to be effective and permanent. Properties, or portions of properties, where soil cleanup has occurred and EPA-approved fill material¹⁹ has been used to backfill the excavation do not need to be re-addressed. The proposed changes will increase the volume of contaminated, residential soil (material) to be removed; therefore, the proposed changes will reduce exposure and risks to more people and are protective of human health.

Reduction of Toxicity, Mobility, or Volume through Treatment

Like the Selected Remedy, the proposed changes do not reduce toxicity, mobility, or volume through treatment. The excavated soil can be disposed of in a repository located within the Superfund Site without treatment and without impacts to other media. Active treatment was screened out as an option for solid media in the 2005 feasibility study because of technical difficulties preventing effective treatment of various metals present, large volume, and low contaminant of concern concentrations. There is no significant difference in reduction of toxicity, mobility, or volume of solid wastes through treatment between the Selected Remedy and the proposed changes.

¹⁹ Soil used to backfill an excavation of contaminated material at a residential property must meet specific, defined criteria for metals and other soil properties, defined in the *Butte Hill Revegetation Specification* and approved by EPA.

Short-Term Effectiveness

Differences in short-term effectiveness between the “No Action”/Selected Remedy and the proposed changes to the Selected Remedy come from the increased number of residential properties that would need to be addressed due to the lower proposed cleanup level and the proposed BPSOU boundary expansion. Sampling and remediation based on the proposed changes will take additional time to complete. Residential properties where young children or other vulnerable populations are present will be a higher priority for action because of higher risk. The time required for completing the work needed due to the proposed remedy changes, as compared to the Selected Remedy, will extend the period of disruption to the community.

A significant number of additional crews will be needed to support the updated timeframes to complete the sampling within eight years and the remediation of residential soil and interior dust within 15 years from 2026. There is a significant difference in short-term effectiveness between the Selected Remedy and the proposed changes because of the additional residential properties to be evaluated and remediated.

It is expected that the disruption will include additional traffic due to hauling and equipment mobilization, potential noise, and impacts to community infrastructure (e.g., roads).

Additionally, short term risks to workers include the inherent safety risks associated with heavy equipment. Disruption would primarily be attributed to hauling both contaminated materials excavated from residential properties to the repository in addition to the increased hauling to bring EPA-approved fill onsite. Other short-term challenges include impacts due to changing weather conditions. With the additional properties to be cleaned up, there will be a need to work longer throughout the year and through more seasons. Considerations and contingency planning will be critical to ensure that worker safety is prioritized in inclement weather (e.g., rain, snow). There could be impacts to the environment during implementation of the remedial action caused by heavy construction and hauling equipment. Use of fuel-efficient and low-emission equipment could mitigate these impacts. Safety measures such as dust suppression and personal protective equipment will be used to protect workers.²⁰ Construction best practices will be implemented to ensure signage and flaggers are appropriately deployed where truck traffic could pose increased safety hazards.

While there are important considerations regarding short-term effectiveness, most of these challenges will be addressed through effective construction management and planning.

Implementability

There are no changes to the current construction practices; standard equipment, such as excavators and trucks, will continue to be used to clean up residential properties. Implementability of the proposed changes to the Selected Remedy will be affected by the need for additional crews to conduct the work as well as the ability to secure backfill for residential properties identified for action activities. The logistics to bring in enough EPA-approved fill material to support cleanup of the residential properties within the proposed BPSOU boundary expansion area should be considered. Based on these considerations, there is a difference between the Selected Remedy and the proposed changes when applying this particular evaluation criteria. However, the proposed changes result in a protective remedy that reduces exposure and risks to more people, outweighing the implementability considerations.

Cost

The proposed BPSOU boundary expansion increases the number of residential properties to be sampled under the RMAP by approximately 7,100 properties. There are more than 6,000 unsampled residential properties in the proposed expanded area that require soil and dust sampling. The proposed lower cleanup level will likely increase the number of additional residential properties that require action and, therefore, the cost associated with those activities. This includes costs to sample residential properties in the proposed BPSOU boundary expansion and reevaluate residential properties previously sampled to determine if remedial actions would now be necessary. It is estimated that nearly

²⁰ As stated in the 2006 Record of Decision, “There are no short-term threats associated with the Selected Remedy that cannot be readily controlled through applicable health and safety requirements, monitoring, and standard construction practices.”

1,300 residential properties that were sampled previously and determined to not need remediation will now require action based on the lower proposed lead cleanup level. Residential properties where only a portion of the property was previously remediated will also be reevaluated to ensure that unremediated areas left in place do not exceed the proposed lead cleanup level. The numbers of additional residential properties to sample and remediate can only be estimated at this time applying assumptions.²¹

Estimated Range of Annual Capital Costs: \$8,000,000 to \$18,800,000

Estimated Annual Operation and Maintenance Costs: \$36,000

Estimated Total Cost (Present Value): \$227,000,000

The EPA estimates the annual capital costs to include direct and indirect costs of residential sampling (i.e., residential soil and interior dust), data management, remedial design activities, construction (remedial action) activities, project management, and construction management. These costs are biased high because they assume those residential attics yet to be sampled or remediated have a complete exposure pathway. These costs do not include the costs to sample any currently unsampled BPSOU properties, which are already required to be sampled under the Selected Remedy. The EPA estimates that about 1,200 properties will be sampled each year to complete all assessments within eight years and that up to 450 properties will be remediated each year to complete all necessary remediation within 15 years.²²

Modifying Criteria

State Acceptance and Community Acceptance

The EPA will fully evaluate the modifying criteria only after public comment is received on this 2026 Proposed Plan.

Protectiveness Summary

The proposed changes to the Selected Remedy address potential or actual threats to human health resulting from lead in residential soil and interior dust. The Selected Remedy, with the proposed changes, will achieve the RAOs for the BPSOU, is protective of human health and the environment, and meets the ARARs established for the BPSOU. All other components of the Selected Remedy not proposed to be changed in this 2026 Proposed Plan remain in effect and will continue to be implemented.



Key Documents included in Administrative Record

Key documents used to prepare this 2026 Proposed Plan are available to the public at the EPA Superfund Records Center, 10 W. 15th Street, Suite 3200, Helena, Montana, Monday through Friday, 8:00 to 4:30. Please call ahead at (406) 457-5046. The administrative record file for this 2026 Proposed Plan can be accessed at the Montana Tech Library, 1300 W. Park St., Butte, Montana. The documents are also available at the EPA's BPSOU website: www.epa.gov/butte.

Some key documents in the administrative record file for this 2026 Proposed Plan include:

- Butte Priority Soils Operable Unit, PRP Group 2004. Feasibility Study Report, Phase II Remedial Investigation/ Feasibility Study, Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Prepared for the PRP Group by McCulley, Frick & Filman Inc. April 2004.
- Environ 2014. Butte Priority Soils Operable Unit Public Health Study Phase 1, July 2014.

²¹ EPA 2026e. Basis of Estimate to Support the 2026 Proposed Plan for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.

²² The estimate of 450 residential properties per year is based upon extrapolation of the current RMAP dataset and rates of remediation. Additional sampling will determine the actual number of residential properties requiring remediation.

- EPA 2002. Role of Background in the CERCLA Cleanup Program, U.S. EPA, April 26, 2002, OSWER 9285.6-07P.
- EPA 2025. Residential Lead Directive for CERCLA Sites and RCRA Hazardous Waste Cleanup Program Facilities. October 16, 2025.
- EPA 2026a. Calculation of Updated Residential Soil Lead Preliminary Remediation Goals for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, March 2026.
- EPA 2026b. Summary of Naturally Occurring Background Soil Lead Concentrations for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, April 2026.
- EPA 2026c. Anthropogenic Lead Background Source and Concentrations Summary for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.
- EPA 2026d. Residential Metals Abatement Program (RMAP) Evaluation of the Extent of Contamination for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.
- EPA 2026e. Basis of Estimate to Support the 2026 Proposed Plan for the Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area Superfund Site. Memorandum. U.S. EPA, May 2026.
- Ramboll 2020. Second Butte RMAP Medical Monitoring Study (Phase 2) Report, March 2020.
- Ramboll 2026. Third Butte RMAP Biomonitoring (Phase 3) Report – Draft Final. May 2026.

Public Participation and Community Engagement

Open House and Public Meeting

The release of this 2026 Proposed Plan starts the 30-day public comment period (June 1 through June 30, 2026). During the public comment period the EPA will host an open house followed by a presentation during a formal public meeting. At the end of the presentation, a stenographer will be available to receive verbal public comment.

Tuesday, June 16

**The Montana Tech Library Auditorium
1300 West Park Street**

Open House from 5:00 to 6:00 pm.

Public Meeting and Stenographer for Verbal Comment from 6:00 to 7:00 pm.

Written comments can also be submitted through the duration of the public comment period – see yellow box below.

Site Contacts

U.S. Environmental Protection Agency (EPA), Region 8

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Providing Written Comments

**The 30-day public comment period runs from
June 1 through June 30, 2026.**

Please send written comments to:

**U.S. Environmental Protection Agency
ATTN: Butte Superfund Site Team
10 West 15th Street, Suite 3200
Helena, MT
59626**

Or send your comments via email to:

EPAButtePPcomments@epa.gov