Exhibit 1

Residential Solid Media Remedial Action

Statement of Work

1.0 Introduction

This Residential Solid Media Remedial Action Statement of Work (SOW) outlines the remaining residential remedial action elements for the 2020 Amendment to the Administrative Order for Partial Remedial Design/Remedial Action Implementation and Certain Operation and Maintenance at the Butte Priority Soils Operable Unit/Butte Site, Docket No. CERCLA-08-2011-0011 (2020 Order Amendment) in consideration of the 2006 Butte Priority Soils Operable Unit (BPSOU) Record of Decision (EPA 2006), as modified by the 2011 BPSOU Explanation of Significant Differences (ESD) (EPA 2011), and the 2020 Record of Decision Amendment (collectively the "Selected Remedy" or "ROD"). The 2020 Record of Decision Amendment requires an expanded Residential Metals Abatement Program (RMAP). As noted below, the Residential Solid Media Remedial Action required by the 2006 BPSOU Record of Decision as modified by the 2011 BPSOU ESD and the 2020 ROD Amendment (2020 RODA) has not been fully implemented or completed for all components. This SOW describes the remedial actions and other activities that are required for the continuation of the RMAP.

2.0 Residential Metals Abatement Program

The Selected Remedy requires, among other actions, that residential areas in the Butte area be remediated if yard soils, interior dust in living spaces and/or attics, if an attic pathway exists, are above applicable action levels described in the ROD. The program is designed to mitigate potential harmful exposure of residents to lead, arsenic, and mercury from both mining-related (i.e., waste rock, tailings, and aerial emissions) and non-mining (i.e., lead paint, lead pipes, and lead solder) sources. The potential sources of lead, arsenic, and/or mercury exposure that are addressed include yard soil, interior living space dust, interior and/or exterior lead-based paint, lead in drinking water from pipe solder, and non-living space dust when exposure pathways are identified. The cleanup requirements apply throughout the BPSOU and also include an expanded geographic area adjacent to the BPSOU, as shown in Figure A-2 of the 2020 RODA, attached hereto as Figure 1 (referred to herein as the "2020 RMAP Area"). This SOW requires the City and County of Butte Silver Bow (BSB) and the Atlantic Richfield Company (AR, and collectively "Respondents"), to develop a draft revised RMAP Plan for review and comment by the EPA in consultation with the Montana Department of Environment Quality (DEQ). EPA and DEQ will review and comment on the draft, revised RMAP Plan. A final RMAP Plan shall be submitted by the Respondents in response to the comments for review and possible approval by EPA in consultation with DEQ. The approved RMAP Plan shall be implemented by the Respondents.

The revised RMAP Plan shall include the components of the program described in the 2006 Record of Decision, the 2011 ESD, and the 2020 RODA. The RMAP Plan shall require that all residential properties within the BPSOU be sampled, assessed, and abated as described in the 2006 ROD, 2011 ESD and 2020 RODA. An indoor and outdoor assessment (i.e., residential yard soil, indoor and outdoor dust, attic dust, and in appropriate cases, lead-based paint and drinking water infrastructure) of all residential properties that are known to be occupied or expected to be occupied must be completed as described in the revised RMAP Plan. The clean-up of residential properties that exceed the action levels shall be prioritized and occur in concert with the assessment program. Outside BPSOU, assessment of residential properties within the RMAP expansion area will be completed, if requested by the occupant or property owner (i.e., test by request basis). Assessment and remediation of residential properties that exceed action levels outside BPSOU and within the RMAP expansion area will also be completed as described in the revised RMAP Plan. In addition, the program will continue to use community awareness and education, risk

communication, long-term database upkeep and tracking, and medical monitoring to ensure its effectiveness. Revisions to the medical monitoring program are provided in Attachment 1.

2.1 Existing Program

The revised RMAP Plan and associated QAPP will include a description of the existing RMAP, with necessary modifications, as detailed in the sections below.

2.1.1 2011 ESD Soil Sampling and Removal Depth Changes

The 2006 ROD stated the following residential soil, removal, and replacement requirements (from page 12-20 of the 2006 ROD):

"…At a minimum, [residential] soil will be sampled from the 0 to 2-inch depth interval within decision units (e.g., front yard, back yard, play area, driveway, etc.) and replacement to minimum depth of 18 inches. Removal and replacement depths will be 24 inches in gardens that could be used to grow vegetables for human consumption. Other materials, such as road base, gravel, etc., will be used as replacement material where appropriate (e.g., driveways, walkways, etc.). A lightweight geotextile marker fabric will be placed beneath the clean soil cover to indicate that the underlying soil may contain lead, arsenic and/or mercury in excess of the action levels. Soil will be removed and replaced in all accessible areas; inaccessible soil under buildings, paved areas, etc., will not be sampled or removed. All sampling and remediation activities will be implemented under a Residential Access Agreement approved by EPA. Soil remediation, where required, will be subject to a remedial action plan for each site, to be approved by EPA in consultation with DEQ."

The 2011 ESD added subsurface sampling depths of 2 to 6 inches and 6 to 12 inches and specified a minimum removal and replacement depth of 12 inches for soil exceeding action levels in yard areas, and of 24 inches for soil exceeding action levels in vegetable gardens. . The change in yard soil depth sampling was made to better define the presence of contamination for the COCs at three increments instead of the original one sample collected. The goal is to remove residential soils that exceed an action level and provide a minimum 12-inch clean soil barrier in yards. The removal depth of 24 inches in vegetable garden areas remained unchanged.

2.1.2 Community Awareness and Education Program

The 2006 ROD for BPSOU expanded upon the existing BSB Lead Intervention and Abatement Program and required implementation of the RMAP by BSB and AR to sample, assess, and remediate Contaminants of Concern (COCs) in residential properties within and adjacent to in certain areas to BPSOU. It also required implementation of awareness and education programs to further protect the Butte community. The Community Protective Measures Program (CPMP) Plan sets forth BSB's and AR's specific responsibilities with respect to the coordination, implementation and management of the CPMP and is intended to operate in conjunction with the RMAP Plan and the Institutional Controls Implementation and Assurance Plan (ICIAP) for the BPSOU site. The CPMP Plan is included as Appendix F of the ICIAP.

An extensive community awareness and education program is still an integral part of the RMAP to manage lead, arsenic, and/or mercury exposure within the BPSOU. The CPMP Plan includes a range of

education programs to enhance and maintain the community's awareness of potential sources and exposure risks to lead, arsenic, and/or mercury in and around homes, as well as approaches residents can take to avoid exposures. The CPMP Plan also includes advertising and outreach programs, periodic mailings to property owners and residents within the BPSOU and distributing free educational materials to various target groups. The revised RMAP Plan shall include a section on “Community Awareness and Education” and reference the CPMP in the ICIAP.

The revised RMAP Plan shall also address environmental justice for all residents, including continuing efforts to provide outreach, education, and testing within the community and working with property owners in rental situations and low-income citizens. Both the Respondents and EPA/DEQ are sensitive to property owners in landlord situations, yet it is vital that all residential properties within the BPSOU be sampled and remediated if results exceed RMAP action levels. It is critical that RMAP make services available to all residents within BPSOU and the expansion area, and address all properties in that area that meet the program criteria. RMAP does not discriminate based on income or where someone lives. , Obtaining access to all potentially impacted properties within BPSOU is vital to RMAP success. Property access is addressed in Section 2.2.3 below.

2.1.3 Residential Assessment and Remediation Timeframe in BPSOU

The 2011 ESD modified the time allotted for assessment and abatement of all residential properties within the BPSOU. The 2011 ESD required three attempts to perform assessments of all residential yards within the BPSOU to occur in 10 years and all contaminated residential yards within the BPSOU to be remediated in 20 years, except for those properties for which access cannot be obtained. In 2020, the 10 and 20 year timeframes will begin as goals for completion of these activities; however, with the balance of this critical remedy component awaiting completion and public interest in completing the cleanup in the Butte area, additional resources may need to be applied by the Respondents to meet this schedule for the required properties within BPSOU. The 2011 ESD stated that three attempts (by mail or other documented means) to obtain access from the current owner of record for sampling or remediation, without success, meets the directive for outreach and assessment of BPSOU residential yards, understanding that assessment and any required remediation will be conducted later, when and if access is obtained to that property for RMAP purposes in the future. EPA will provide support to gain access as described in the ICIAP and in Section 2.2.3 below.

2.1.4 Agreement Between AR and BSB

A revised agreement between BSB and AR is anticipated for the implementation of the RMAP. This agreement shall be made public and a joint declaration by the Respondents’ stating their intent to complete the residential assessment and abatement of all BPSOU residential properties shall be made consistent with the residential assessment and remediation timeframe as specified in Section 2.1.3 above.

2.1.5 Residential Assessment and Remediation

One of the primary objectives of the RMAP is to remediate residential yard components to below the residential action levels of 1,200 mg/kg lead, 250 mg/kg, arsenic, and 147 mg/kg mercury to a minimum depth of 12 inches (with the exception of vegetable/flower gardens, which will be remediated to a depth of 24 inches) by removing and replacing soil, placing permanent covers, and/or ICs in a manner consistent with the 2006 ROD, the 2011 ESD, and 2020 RODA.

In addition to addressing residential soils within the BPSOU, RMAP remediates contaminated attic dust to below residential action levels. Attic dust sampling will occur in homes constructed prior to 1980. Attic dust will be addressed with the objective to remove attic dust with concentrations exceeding action levels if an exposure pathway to the interior living space is present. Attic dust exceeding action levels present in portions of homes that are seldom visited (non-living space areas), such as attics or crawl spaces, will be remediated only if at least one of the following conditions is met:

1. The attic is used as living space;
2. On average, the resident(s) enters the attic more than once per week;
3. Ceilings in the living space immediately below the attic are in a condition of disrepair with obvious exposure to the attic;
4. The resident has contacted BSB (per CPMP public outreach programs) regarding concerns about potential exposure to attic dust, which may result from a home remodeling project; or
5. An indoor (living space) dust sample exceeds action levels.

If none of the criteria are met, then no exposure pathway to the attic exists and the attic does not pose an unacceptable risk to the residents. If assessment of living space identifies an exceedance of action levels and a pathway of exposure is created at some point in the future, for example an interior renovation is planned or the use of the space changes, then the home will be remediated at that time.

Properties not addressed because the owner would not allow access, or properties containing attic dust exceeding action levels with no current exposure pathway will be flagged and tracked in a database for future action. These properties will be tracked for at least 99 years.

2.2 New Program Elements

The revised RMAP Plan and Quality Assurance Project Plan (QAPP) will include a description of the new elements to the RMAP, as detailed in the sections below.

2.2.1 RMAP Expansion Area

It was recognized in the 2006 ROD that homes outside of the BPSOU may have contaminated dust in the attics. In 2011, the RMAP attic dust program was expanded to areas south and west of the BPSOU boundary, encompassing the southern urban area of Butte. The 2020 RODA expands the RMAP boundary further to encompass rural residential development (i.e., the RMAP expansion area) to the north, south, east, and west, including the Rocker and Ramsay communities, and certain other areas within Silver Bow County, but excluding the Beal Mountain, Solvay, and Continental Mine areas (see Figure 1). Figure 1 defines this additional area in which yards and attics with elevated concentrations will be addressed by the RMAP, upon request. The BPSOU and the RMAP expansion area together are now referred to as the “2020 RMAP Area”. The revised RMAP Plan and QAPP should define geographic boundaries of the 2020 RMAP Area as illustrated on Figure 1. The revised RMAP Plan and QAPP should also include provisions for administering and sampling areas of new development, such as locations where permits for excavation/dirt moving have been issued.

Work in the RMAP expansion area will include all RMAP facets (soils, living area dust, and, in appropriate cases, drinking water, lead-based paint, and attic dust). Importantly, properties outside the BPSOU boundary but within the RMAP expansion area will be sampled by request only. Homes and residential yards may be sampled for lead, arsenic, and mercury (under certain circumstances) at the resident's request, and homes and yards that exceed the RMAP action levels will be remediated in the same manner as residential areas and other covered land uses within the BPSOU. EPA and DEQ will be notified of any elevated blood lead case resulting from drinking water issues identified in the RMAP expansion area and will be addressed on a case-by-case basis. Homes in the RMAP expansion area may also have contaminated dust in the attics. Homes in the RMAP expansion area that have lead, arsenic, or mercury in attic dust will be addressed in the same manner as homes within the BPSOU if requested by a resident.

2.2.2 Additional Property Types Within the BPSOU

Residential soils frequented by children including yards, designated park playgrounds and school playgrounds (including daycares and preschools) will also now be subject to RMAP sampling and remediation using applicable BPSOU residential action levels. Since not all of these area types have a zoning designation, the revised RMAP Plan will define these generally accessible public areas and describe the process for sampling them. To also be included in the revised RMAP are residential properties within commercial/industrial areas and residential living spaces within otherwise commercial buildings. Schools and commercial living spaces shall also have defined protocols developed under the revised RMAP Plan.

In addition to addressing residential soils and attic dust, earthen basements will also be addressed with the objective to remove and/or encapsulate accessible soils with concentrations exceeding residential action levels.

2.2.3 Property Access Process

The Selected Remedy requires that all residential properties within the BPSOU be sampled, assessed, and remediated within a reasonable time frame, if action levels are exceeded for arsenic, lead, and mercury. Acquiring a Sampling Request Form from the property owner is a critical step in the RMAP process. Sampling Request Forms for soil and attic dust sampling will be pursued for all residences within the BPSOU. The Respondents will conduct a maximum of three attempts to contact eligible landowners within BPSOU to obtain Sampling Request Forms for sampling, which may include mailings, phone calls and visits to the home. Residences in the broader 2020 RMAP Area outside the BPSOU will not be directly contacted but may request sampling of their soil and/or attic dust. In these cases, a Sampling Request Form must also be obtained before sampling can occur.

When access is denied, BSB will track the attempt(s) to gain access of the property for environmental assessment within the RMAP database. Additional attempts to gain access will be made until three attempts are recorded, or access is granted. After three attempts are recorded, EPA and DEQ will be notified and EPA and/or DEQ may file a deed notice to the title records of the subject property and notify the property owner. The Respondents will monitor future changes in ownership annually; if ownership changes, access attempts will be reinstituted. The process for tracking ownership changes will be provided in the revised RMAP Plan.

Rental properties may require special attention, particularly if children are involved and the landlord is refusing access to the property. If access to a rental property cannot be obtained through the standard process, EPA/DEQ will initiate extraordinary steps to obtain access if children may be impacted. These steps include additional phone contacts, certified mailings, setting up a private meeting with the landlord, and, if necessary, legal action in order to obtain access.

There are instances of usage or activities on properties that are incompatible with an RMAP remedy or the Butte Reclamation Evaluation System (BRES) reclaimed caps over mine waste or soils with elevated metals. Known examples include pasturing of animals and industrial activities that compromise cap integrity. These cases must be referred to EPA/DEQ and handled on a case-by-case basis as each situation is unique. Follow-on actions by EPA/DEQ include additional phone contacts, certified mailings, setting up a private meeting with the landowner, and, if necessary, legal action in order to obtain access and/or improve site conditions consistent with maintaining the remedy. Respondents will monitor future changes in ownership annually; if ownership changes, EPA/DEQ will be notified and renewed steps, as necessary, to address the incompatible activities will be made by EPA/DEQ. The process for referring properties to EPA/DEQ for further action and Respondents tracking of ownership changes will be provided in the revised RMAP Plan.

2.2.4 Source Area Boundary Adjustments

In mid-2019, the Respondents initiated an evaluation of the boundaries of reclaimed sites within the BPSOU. Initially, it was found that the boundaries of many of the sites were not representative of the remediation that was implemented, and preliminary boundary adjustments were prepared by manual realignment or merging of remediated areas. Site edges were adjusted to align with hard features (such as roads, channels, property features, etc.) to reduce ambiguity in the field and allow appropriate maintenance to be performed to preserve site remedies. In many instances, reclaimed source area sites overlapped with private property, making BRES evaluations more complicated to complete due, for example, to property access and different land uses (e.g., residential vs. open space source area reclamation). Consistent with the BPSOU Consent Decree, designated source areas are required to be maintained by the Respondents and in some cases the reclaimed source area is located, in part (and sometimes wholly on), private property. In these instances, property owners have an obligation to limit themselves from actions that my compromise the integrity of a cap over a source area or damage an associated remedy feature (e.g., a drainage structure, retaining wall). However, when any source area boundary is proposed to be changed or included as a residential property that falls under the RMAP, EPA in consultation with DEQ will review and approve, if appropriate.

2.3 New Program Additional Details

In June 2017, the Respondents provided the *Revised Final Multi-Pathway Residential Metals Abatement Program Plan* with the purpose of mitigating potentially harmful exposure of residents of the BPSOU and adjacent areas to sources of lead, arsenic, and mercury contamination. The EPA and DEQ provided comments on that plan. The Respondents shall develop an updated revised RMAP Plan that incorporates those comments and the additional RMAP elements as described in this SOW. The revised RMAP Plan, and associated QAPP, once approved by EPA and DEQ, shall be implemented by the Respondents to address accessible indoor dust, contaminated soils, accessible attic dust, lead-based paint, and mercury vapor as described in the subsections below.

2.3.1 Types of Properties Included in the Program

To date, the RMAP has focused on addressing contamination at residences within the BPSOU. The revised RMAP Plan will broaden the definition of the types of properties used for residential living purposes and will now include schools. Residential properties include single family residences, multi-family housing, designated park playgrounds, residential properties within commercial/industrial areas, residential or commercial properties utilized as daycares, and residential living spaces within commercial buildings. Schools include public and private schools and preschools.

2.3.2 Drinking Water

Drinking water will be sampled as a component of an elevated blood lead investigation under the RMAP . The RMAP staff will collect a sample of the drinking water from the primary tap of the household during these investigations. This sample should be a first draw (no purging) to identify if old lead pipes are a source contributing to elevated blood lead levels.

2.3.3 Multiple-Depth Soil Sampling

The 2006 ROD called only for surface soil sampling in residential areas from 0 to 2 inches. As modified in the 2011 ESD, samples will be collected in residential areas at depths of 0 to 2 inches, 2 to 6 inches, and 6 to 12 inches, and reported accordingly. Properties previously sampled only from the 0 to 2 inch interval shall be re-evaluated to ensure multi-depth sampling (i.e., 0 to 2, 2 to 6, and 6 to 12-inch intervals) has occurred unless the property has been previously remediated in entirety to depths greater than 12 inches. Sampling of the 2 to 6 and 6 to 12 intervals shall be conducted and additional cleanup, as necessary, shall occur based on those sampling results. Additional schedule adjustments will need to be defined in the revised RMAP Plan.

2.3.4 Laboratory Requirements

Results received from the laboratories will be documented both in report form and in an electronic format. Laboratory documentation includes copies of the signed chain of custody forms, laboratory confirmation reports including information on how samples have been batched and the analyses requested, data packages including the laboratory report and the electronic data deliverable (EDD), and any change requests or corrective action requests. A section in the QAPP will present the project's laboratory reporting requirements in detail. The deliverable ("data package" or "report") issued by the laboratories will include data necessary to complete validation of laboratory results in accordance with specifications included in QAPP. Original reports and electronic files received from laboratories will be maintained with the project quality records.

2.3.5 QA/QC Requirements

The QAPP will include sections that address field and laboratory quality control requirements including the final project checks conducted after the data collection phase of the project is completed to confirm that the data obtained meet the project objectives and to estimate the effect of any deviations on data usability. In the *Clark Fork River Superfund Site Investigations (CFRSSI) Data Management/Data Validation Plan Addendum* (ARCO, 2000a), the data review/validation process was streamlined to support the post-ROD decision-making process for both x-ray fluorescence (XRF) and laboratory generated data. The general processes in this plan should still be followed and described in the QAPP.

Data analyzed by XRF will require a subset of samples be submitted for confirmatory analysis, particularly for results near the action levels. Presently, XRF results within 80% to 120% of an action level are to be submitted for confirmation analysis. Further confirmation samples should be selected for analysis from the lower, middle, and upper range of concentrations measured by XRF. Typically, it is recommended that a minimum of 5% of the XRF samples undergo confirmatory analysis using standard laboratory analytical methods. Additionally, the laboratory data compiled under this QAPP will be subject to Level A/B criteria review and validation per the 2017 EPA National Functional Guidelines for Inorganic Superfund Methods Data Review (ISM02.4) and the project DQOs. Data review and validation will be conducted by a qualified technical consultant who is independent from the sampling consultant.

2.4 Data Summary Reports

Sampling for remedial design/remedial action under the RMAP shall be documented by the Respondents through annual Data Summary Reports (DSRs). Sample data, with their laboratory and data usability qualifiers, will be maintained electronically by BSB/AR and reported in the annual report. The annual report will be a DSR prepared based on the guidelines in *CFRSSI Pilot Data Report Addendum* (ARCO, 2000b) following each year of data collection. The annual report will describe the sampling activities for the year, provide a summary of the data obtained, discuss the results of data validation, and provide a detailed listing of any deviations from the QAPP. The DSR will also include a data usability assessment for XRF and laboratory data. The data usability assessment has a data summary table with all the samples and analyte concentrations listed, along with the laboratory- and data validation-assigned qualifiers. The Level A/B checklists, XRF and laboratory validation checklists, and data validation summary will provide an overall assessment of the quality and usability of the data.

2.5 Individual and Annual CCRs

Implemented cleanups shall be documented by the Respondents through individual and annual Construction Completion Reports (CCRs). A CCR documents the residential cleanup construction activities during the previous year. Copies of the individual property-specific CCRs should be provided to the property owner for their records.

The CCR shall contain the following information about the cleanup actions implemented at the properties:

- A brief synopsis of the remedial action objectives;
- Description of the construction activities, construction schedule, quantities of materials, dates of work, and problems encountered during construction;
- Health and safety, and educational activities;
- Post-construction operations, maintenance, and institutional controls requirements; and
- Documentation that the cleanup construction work was performed according to project specifications and performance standards including field notes, borrow source and other analyses, project correspondence, as-built drawings, and electronic images.
- A QA summary containing the results of the construction monitoring and testing.

2.6 Long-term Database

All residential soils and attic dust information generated (e.g., sample results, survey data, Individual Site Work Plans [ISWPs], As-Builts, etc.) will be recorded in the RMAP database and Geographic Information System (GIS) and will be made available to regulators, prospective home buyers, lenders, contractors, and other interested parties, as appropriate with respect to usage and privacy concerns. Data availability to various concerned parties shall be defined in the revised RMAP Plan and Data Management Plan (DMP).

Because of the large number of property owners and varied land-use types that may be affected by the RMAP, the database tracking, documenting communications, sampling data, and metadata are critical program components. Development of a long-term RMAP database shall be described by the Respondents in a DMP and referenced in the revised RMAP Plan and QAPP. Additionally, EPA and DEQ shall have access to the database. Long-term database requirements are as follows:

- Property Status – Ability to maintain a record that documents the status of every residential property within the BPSOU boundary as it goes through the RMAP process and those properties in the 2020 RMAP Area where the owner has volunteered to participate in the RMAP process. Required fields for the recorded information shall include property status, property status description (category), property status date, and property status comment. Required fields for the Property Status portion of database are:
    - Property Status, Property Status Description, Property Status Date, and Property Status Comment.
- Outreach – Ability to document communications between property owners/tenants and AR, BSB, and EPA. Record shall include communications initiated by either the property owner/tenant or AR, BSB, and/or EPA. Required fields for the Outreach portion of database are:
    - Property Owner First Name, Property Owner Last Name, Business Name, Mailing Address (number, street, city, state, zip code), Physical Address (number, street, city, state, zip code), Phone, Email, Property Type, Contact Date, Communications Type (e.g., letter, phone), Person Received, Purpose (reason for contact), and Status of Communication (Open or Closed).
- Property Access – Ability to track current and historic access to properties so it is clear what properties are available for sampling or abatement work and so property owners' determinations about access to their properties are respected. Required fields for the Property Access portion of database are:
    - Access Status, Access Status Date, Access Status Description, Access Status Comment, and Do Not Contact.
- DSRs – Ability to automate production of the tables necessary to prepare DSRs. Required fields for the DSR portion of database are:
    - Sample Location (Geocode), Address, Latitude/Longitude, Area, Sample Name, Sample Date, Sample Type, Sample Matrix, Start Depth, End Depth, Depth Unit, CAS RN, Analyte Name,

Result, Result Unit, Detect Flag (Yes or No), Lab Qualifier, Validator Qualifier, Interpreted Qualifier (Final Qualifier), Validated (Yes or No), Action Level, and Inside/Outside BPSOU.

- Medical Monitoring Reports – Ability to provide risk assessment teams with laboratory data for their analysis work and query data and export it into an un-crosstabbed Excel file format that matches the needs of the risk assessors. Required fields for the Medical Monitoring Reports portion of database are:

  - Sample Location (Geocode), Address, Latitude/Longitude, Area (area sampled), Sample Name, Sample Date, Sample Type (field, duplicate, blank), Sample Matrix, Start Depth, End Depth, Depth Unit, Sampling Method (Composite or Grab), Composite Point Number (number of sampling points that made up composites), Preparation Method, Analytical Method, CAS RN Analyte Name, Result, Result Unit, Detect Flag (Y or N), Reportable Result (Y or N), Lab Qualifier, Validator Qualifier, Interpreted Qualifier (Final Qualifier), Method Detection Limit, Reporting Detection Limit, Practical Quantitation Limit, Validated (Y or N)Action Level, Inside/Outside BPSOU, and GPS locations of points making up composite.

- Homeowner Letters Table – Ability to produce a table of sampling results that shall be sent to homeowners with a letter describing the results. Required fields for the Homeowner Letters portion of database are:

  - Sample Location (Geocode), Address, Sample Name, Sample Date, Sample Type, Sample Matrix, Start Depth, End Depth, Depth Unit, Analyte Name, Result, Result Unit, Interpreted Qualifier (Final Qualifier), Validated (Y or N), and Action Level.

- CCRs – Ability to query for properties that require a CCR and produce summary tables and photographs that shall be include in the CCR. Required fields for the CCR portion of database are:

  - Property Status, Property Status Date, Parcel Area, Removal Depth, Removal Volume, Replacement Volume, Geocode, Start Depth, End Depth, Depth Unit, Analyte, Result, Result Unit, Interpreted Qualifiers (is this required), and Photographs (loaded into files).

  - Tracking of Children – Ability to track properties where children reside within the RMAP database. Shall contain the date the assessment was made to ensure age adjustments are accounted for.

2.7 Existing Data QAPP

The Respondents shall include a section in the existing data QAPP document specified in the Consent Decree providing guidance for reviewing existing data that may be used or potentially be used by the RMAP or medical monitoring program. The Respondents collect the majority of the data used for RMAP and other various purposes and projects at the Butte Site. However, data sets generated by agencies such as the EPA and DEQ, and other entities such as MBMG, USGS, and other BSB County departments may provide data and information useful for the RMAP and medical monitoring program. These existing data must be evaluated to ensure that data meet the data quality objectives required for RMAP-related uses. Examples of possible existing data that may need to be evaluated by the existing data QAPP include, but are not limited to, the following:

- Medical Monitoring Data – These data may be collected by the WIC program, local physicians, or as part of site-specific health studies. Examples include:
  - Blood Lead Levels
  - Urinary Arsenic
  - Urinary or Blood Mercury
- Samples collected under the former BSB Lead Intervention and Abatement Program
- Historic sampling conducted by EPA, Atlantic Richfield, BSB, or other entities (e.g., samples collected on railroad beds, source areas, unreclaimed areas, alleys)
- Residential drinking water and ground water sampling conducted by MBMG

3.0 Project Deliverables and Schedule

Respondents shall submit the following deliverables:

SOW Reference Section	Document or Activity	Submittal or Completion Date
2.0 Residential Metals Abatement Program		
2.2 Program Requirements		
2.2.1 Plan and QAPP		
	Plan	As needed, if revised and submitted then use date of plan approval.
	QAPP	As required
	Schedule for Implementation	As required
2.2.3 DSR		
	Schedule for Implementation	As required
	Data Summary Report	As required
2.2.4 Annual CCR		
	Schedule for Implementation	As required
	Construction Completion Report	As required
2.2.5 Long-Term Database		
	Schedule for Implementation	As required
	Revise Long-Term Database	As required
	Update Long-Term Database	Ongoing

Note to Settling Defendants *– the agencies would like to work with you to establish a workable schedule for the various deliverables described in this Attachment, through inclusion of a specific and approved schedule in the revised RMAP Plan. Some timeframes are described above which can be placed in the table intended for this section.*

4.0 References

ARCO 2000a. Clark Fork River Superfund Site Investigations Data Management/Data Validation Plan Addendum. Prepared for ARCO by Exponent. June.

ARCO 2000b. Clark Fork River Superfund Site Investigations Pilot Data Report Addendum. Prepared for ARCO by Exponent. July.

EPA 2006. Record of Decision, Butte Priority Soils Operable Unit, Silver Bow Creek/Butte Area NPL Site. Prepared by EPA in consultation with and partial concurrence from DEQ. September.

EPA 2011. Explanation of Significant Differences to the 2006 Butte Priority Soils Operable Unit Record of Decision. Prepared by EPA in consultation with DEQ. July.

EPA 2020. 2020 Amendment to the Administrative Order for Remedial Design/Remedial Action Implementation and Certain Operation and Maintenance at the Butte Priority Soils Operable Unit/Butte Site, Docket No. CERCLA-08-2011-0011. Prepared by EPA. June. 2020.

Figure

Figure 1

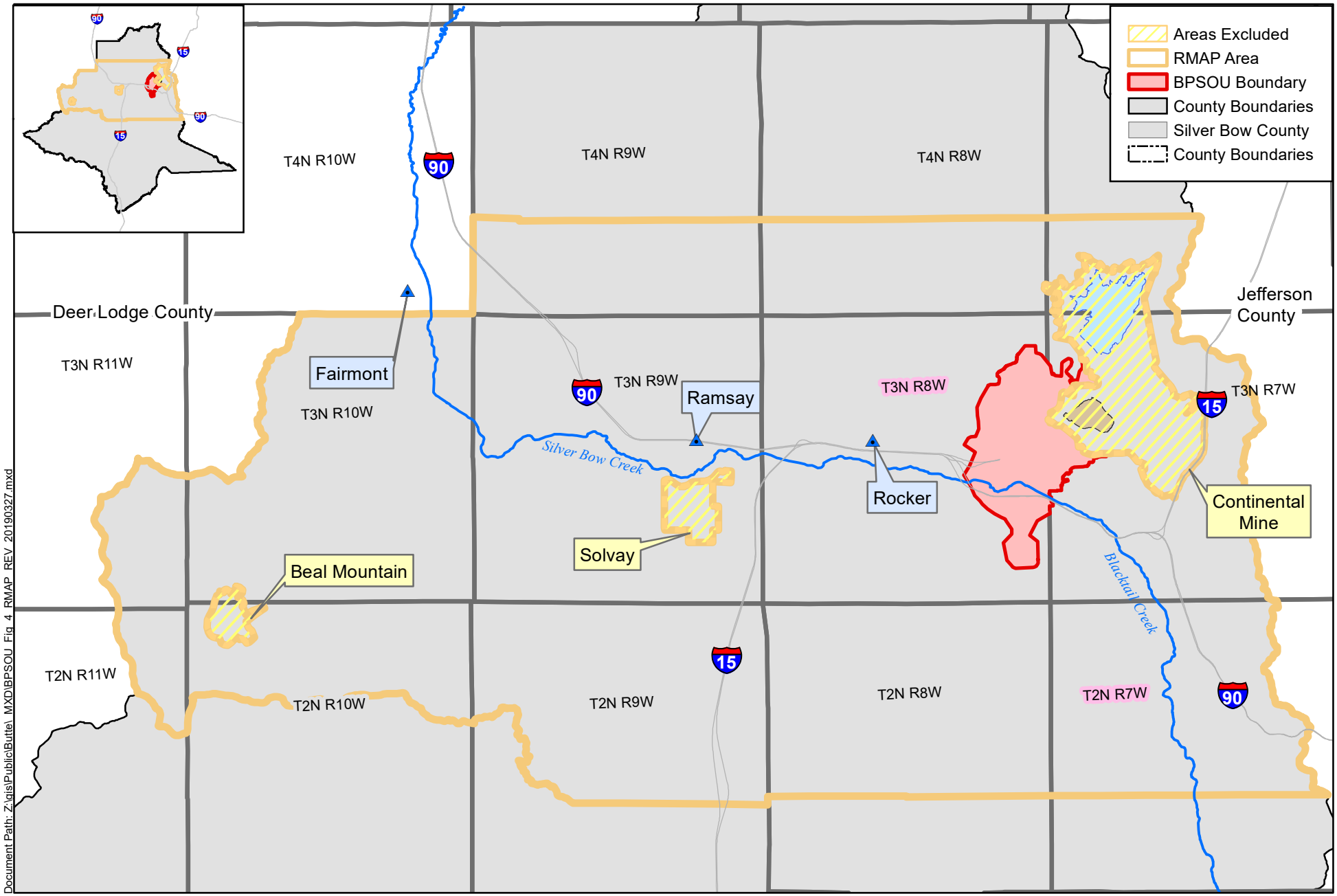

Figure A-2
2020 RMAP Area
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Site

COORD SYS ZONE: MT SP
DATUM: NAD83
UNITS: FEET

EPA United States Environmental Protection Agency

Miles
0 20 40

ATTACHMENT 1 - RMAP Medical Monitoring Program

1.0 Existing Program

Per the 2006 ROD, the Residential Metals Abatement Program (RMAP) is to include medical monitoring using blood lead, urinary arsenic, and blood and/or urinary mercury to identify individuals who have concentrations above risk-based thresholds. The medical monitoring data may be used to determine if immediate or additional sampling of a residential property is necessary and may also be incorporated into Superfund-related studies conducted in the Butte area. BSB, as the lead responsible party for the Superfund medical monitoring studies, will continue to periodically evaluate medical monitoring data via the Medical Monitoring Working Group. This group will continue to evaluate the data collection 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.

As stated in the ROD, lead, arsenic, and mercury were identified as the contaminants of concern (COCs) for the BPSOU. The site risk assessments evaluated other metals, such as cadmium, and did not find these to be important contributors to overall risks. Thus, inclusion of other contaminants in a Superfund health study is beyond the scope of the Superfund remedy, unless significant new information about the site or contaminant toxicity is discovered. EPA and DEQ will work with community members and BSB to continually address public health concerns associated with historical mining waste.

As noted in the 2014 Butte Silver Bow (BSB) public health study (i.e., a medical monitoring study), since 2010, arsenic and mercury biomonitoring have been available under the RMAP when soil and dust concentrations are sufficiently elevated to warrant testing. However, environmental concentrations were seldom high enough and certain protocols were not met to offer such testing and remedial actions have rarely been prompted due to arsenic and/or mercury alone. At this time no data have indicated there needs to be a change in the human health COCs.

BSB has sanctioned the creation of a new committee that would focus on various studies about the health of BSB residents. The new Health Study Advisory Committee, an advisory subcommittee to the Board of Health, will look at various recent and any future health studies focused on Butte, and may include the Medical Monitoring Studies. The existing Medical Monitoring Working Group will continue its role reviewing the outcomes from the blood-lead medical monitoring and the effectiveness of the RMAP established as Superfund programs.

1.1 Medical Monitoring

The medical monitoring component of the RMAP is primarily focused on lead, as this was the primary risk driver identified in the human health risk assessments for the BPSOU. The population of key concern for lead exposures is children; thus, by monitoring blood lead levels in children, the RMAP is focusing both on the primary contaminant of interest and on the key population of interest. Monitoring blood lead levels provides a direct and stable measure of total lead exposures across all potential contamination sources, including those that are mining-related (e.g., soil, dust, air) and those that are not mining-related (e.g., water, food, paint). In addition, because blood lead levels are commonly measured in children nationwide, it is possible to make comparisons between blood lead levels for children in Butte and children outside of Butte to inform decisions about the efficacy of the remedial action. Urinary arsenic

and urinary/blood mercury testing will be offered to the residents if elevated concentrations of mercury or arsenic are discovered during the environmental assessment process. Although lead is the primary risk driver, monitoring for urinary arsenic and urinary/blood mercury will be provided as currently specified unless modified in the future by EPA after careful study and approval.

The Respondents shall continue to implement the medical monitoring program and to distribute education materials to the public as described in the revised RMAP Plan. When individuals are found to have a confirmed elevated blood lead, urinary arsenic, or urinary/blood mercury, the home where the affected person or persons live shall be scheduled for immediate sampling and evaluation. Blood lead screening will be conducted by the Women, Infants, and Children (WIC) program with analysis conducted by an accredited laboratory. Urinary collection will require participants to complete a consent form for participation and an ATSDR-approved individual questionnaire. Reports documenting periodic evaluations will respect the personal privacy of the participants, EPA, DEQ, and potentially responsible parties. All stakeholder parties will continue to facilitate, participate, and contribute with the Medical Monitoring Working Group.

BSB, in coordination with the Medical Monitoring Working Group, will continue to periodically evaluate medical monitoring (i.e., biomonitoring) data approaches and other data compiled under the medical monitoring program every five years for a period of 30 years, which began in 2014. Reports documenting these periodic evaluations will respect the personal privacy of the participants and will be available to the public, EPA, DEQ, and Respondents. BSB will coordinate these evaluations with all stakeholders. The evaluations are subject to EPA review and approval, in consultation with DEQ. All stakeholder parties will continue to facilitate, participate, and contribute with the Medical Monitoring Working Group. For each five-year evaluation period, the following activities will be conducted:

- The current state of the science regarding collection and interpretation of biomonitoring data will be reviewed to determine whether any updates are needed to the sampling, analysis, and interpretation of biomonitoring data collected in conjunction with the Program. This will include review of the benchmarks currently being used to assess elevated biomonitoring results for the Program.

- Summary statistics for available arsenic, lead, and mercury biomonitoring data will be updated with biomonitoring data for BPSOU populations of interest that have been compiled since the prior evaluation period. Quality assurance review of the database will seek to identify and address incomplete or missing records from the compilation.

- As available, the results of recent studies of soil and dust exposures to arsenic, lead, and/or mercury, if any, will be reviewed and summarized.

- As available, the results of recent morbidity and mortality statistics for the Butte population reported by the Montana State Public Health state public health entities will be reviewed and summarized.

- As available, recent peer-reviewed epidemiology studies examining the relationship between environmental exposures to arsenic, lead, and/or mercury and diseases with increased incidence in Butte will be reviewed and summarized.

- The most recent biomonitoring database will be used to describe exposure trends over

time. To the extent supported by the available data the approaches and methodologies of the 2014 evaluation will be used to compare blood lead data across Butte neighborhoods. If feasible, the data will also be compared to a defined reference population.

The five-year Health Studies were never intended to look at the entirety of contaminants of concern in the BPSOU; the studies were intended to look at contaminants linked to the RMAP – lead, arsenic and mercury. The Health Studies have one primary mandate: to look at whether the RMAP is effective in support of EPA's Five-Year Review.

2.0 New Program Requirements

The five-year Superfund medical monitoring study process remains focused on elevated lead because elevated lead is more prevalent in Butte than elevated arsenic and mercury. Since 2010, arsenic and mercury biomonitoring have been offered under the RMAP when environmental sample concentrations in soil or dust are high enough to warrant such testing; however, arsenic or mercury results to date have rarely indicated a need for additional testing. Any arsenic and mercury biomonitoring data obtained moving forward may be used in future studies.

2.1 Expansion of Test Availability

Currently, a proactive approach to biomonitoring is conducted on behalf of all children in the BPSOU and areas outside of BPSOU, but moving forward, biomonitoring will be available to all BPSOU residents upon request. Data will continue to be collected from pediatric clients within the Health Department's WIC program, and from other pediatric and adult populations who request testing at the Health Department, including aging and aged residents. Details of the expanded testing program will be provided in the revised RMAP Plan.

2.2 Expanded Community Outreach

A clinical environmental health employee of the BSB Health Department will assist with outreach to such populations to educate about contaminants and various protective practices. This employee will also work within the Health Department's WIC program, which serves low-income populations and populations with other barriers to health. Under this employee's leadership, biomonitoring in the WIC program will continue and follow-up testing for suspect elevated blood lead levels will be conducted. Further follow-up will also occur with area pediatricians and other healthcare providers. Moving forward, the RMAP will continue to request access to all BPSOU properties, to conduct biomonitoring assessments, and will conduct environmental assessments upon request within the remainder of the 2020 RMAP Area. Along with RMAP outreach personnel, the BSB Health Department's clinical environmental health employee will perform outreach to the entire community, including those neighborhoods with particular barriers to health, to educate about lead and other contaminants, and the opportunity the RMAP represents for residential testing.

The BSB Health Department's clinical environmental health employee will also conduct outreach to Butte schools to educate about the RMAP and the risks associated with exposure. Because of HIPAA concerns, testing within school settings could be problematic, but referrals to the Health Department, including through its CONNECT referral system, could occur, on an individual or group basis.

2.3 Increase Support for the Medical Monitoring Working Group

BSB and AR, as Respondents, will retain the Medical Monitoring Working Group, which advises and informs the Superfund Medical Monitoring Study process. The Medical Monitoring Working Group will consist of BSB and AR representatives, agency representatives, and one representative of CTEC. Once a study is issued to the public, work on the next study will begin, with a focus on the daily activity of biomonitoring, and routine check-in on monitoring and outreach efforts. This check-in should ensure that gaps in collection of biomonitoring data are eliminated. BSB and AR will be responsible for determining the Medical Monitoring Working Group's membership and facilitating Medical Monitoring Working Group meetings, with insight and input from enforcement agencies and members of the public, as selected by BSB and AR. Medical Monitoring Working Group meetings should focus on lead data, but also arsenic and mercury data when and if produced.

The 2010 RMAP Plan and its enhancements in the 2017 and 2020 revised RMAP Plan will continue to be a guide for studies moving forward. This includes the Medical Monitoring Working Group identifying residential exposures; compiling and interpreting related toxicology information; discussing and addressing routes of exposure; compiling and interpreting morbidity/mortality statistics; and discussing influencing factors for mortality rates. The Medical Monitoring Working Group and its retained consultants and advisors will also continue to collect and discuss the latest epidemiological literature for newly determined links between contaminants of concern and disease. Past studies will continue to inform future studies.

The Respondents will ensure that there is clarity surrounding past study data, and how those data inform current and future studies; how data have been and are collected, coordinated, disseminated and archived; and how those data are leveraged into useful action and recommendation. Once each study is published, work on the next study will proceed. The Respondents will more tightly define what the Medical Monitoring Working Group is – who serves on this committee, how public input and insight are solicited and received, and how other elements central to the group are defined. Moving forward, the BSB Health Department will be, along with AR, sanctioned to steer the Medical Monitoring Study process. Along with the county's health officer and RMAP personnel, other Health Department personnel will work to coordinate with the Medical Monitoring Study process.

3.0 Project Deliverables and Schedule

Respondents shall submit the following deliverables:

SOW Reference Section	Document or Activity	Submittal or Completion Date
Attachment 1 Superfund Medical Monitoring Studies		
	Schedule for Implementation	As required
	Revised Medical Monitoring Study Work Plan	As necessary
	Existing Data QAPP	As required
	Health Study Group Meeting Minutes	As required
	Health Study Report	As required

Note to Respondents *– the Agencies would like to work with you to establish a workable schedule for the various deliverables described in this Attachment, through inclusion of a specific and approved schedule in the revised RMAP Plan. Some timeframes are described above which can be placed in the table intended for this section.*