

BPSOU STATEMENT OF WORK

for the

BUTTE PRIORITY SOILS OPERABLE UNIT

of the

SILVER BOW CREEK / BUTTE AREA SUPERFUND

SITE

Butte-Silver Bow County, Montana

APPENDIX D

TO THE CONSENT DECREE

Consent Decree for the Butte Priority Soils Operable Unit
 Partial Remedial Design/Remedial Action and Operation and Maintenance

TABLE OF CONTENTS

1.0 INTRODUCTION1

1.1 Purpose of the SOW 1

1.2 Structure of the SOW 1

1.3 Scope of the Remedy 1

1.4 Relation to Previously Completed BPSOU Site Work 4

1.5 Ongoing Remedial Elements 5

1.6 Further Remedial Elements to be Implemented..... 7

1.7 DEQ Participation 7

1.8 BPSOU Site Decision Documents 8

1.9 Definitions and Abbreviations 8

2.0 COMMUNITY INVOLVEMENT9

2.1 Community Involvement Responsibilities..... 9

3.0 REMEDIAL DESIGN10

3.1 RD Work Plans 10

3.2 Periodic Meetings 10

3.3 Pre-Design Investigations 10

3.4 Preliminary (30%) RDs..... 11

3.5 Intermediate (60%) RDs 11

3.6 Pre-Final (95%) RDs..... 12

3.7 Final (100%) RDs 12

4.0 REMEDIAL ACTION13

4.1 RA Work Plans 13

4.2 Implementation and Construction Of Work Elements Included In The Remedial Designs..... 13

4.3 Meetings and Inspections..... 13

4.4 Emergency Response and Reporting 14

4.5 Off-Site Shipments..... 15

4.6 RA Construction Completion. 15

4.7 Certification of RA Completion..... 16

4.8 Periodic Review Support Plan (PRSP) 18

4.9 Certification of Work Completion 18

5.0 REPORTING20

5.1 Progress Reports 20

5.2 Notice of Progress Report Schedule Changes. 20

6.0 DELIVERABLES21

6.1 Applicability 21

6.2 In Writing..... 21

6.3 General Requirements for Deliverables 21

6.4 Technical Specifications 21

6.5 Certification 22

6.6 Approval of Deliverables 22

6.7 Supporting Deliverables..... 23

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

| | | |
|------------|--|-----------|
| 7.0 | SCHEDULES | 27 |
| 7.1 | Applicability and Revisions | 27 |
| 7.2 | RD and RA Schedules | 27 |
| 8.0 | STATE PARTICIPATION | 28 |
| 8.1 | Copies | 28 |
| 8.2 | Review and Comment..... | 28 |
| 9.0 | REFERENCES..... | 29 |
| 9.1 | Regulations and Guidance Documents. | 29 |
| 9.2 | EPA Web Pages | 30 |
| 9.3 | Other Regulations and Guidance | 31 |

LIST OF EXHIBIT AND ATTACHMENTS

| | |
|----------------|---|
| Exhibit 1 | Remedial Design/Remedial Action Schedule for the Further Remedial Elements Scope of Work |
| Attachment A | BPSOU Surface Water Compliance Determination Plan |
| Attachment B | 2019 Status for the 2011 Unilateral Administrative Order Work Plan for BPSOU Partial Remedial Design/Remedial Action Implementation |
| Attachment B.1 | Ongoing Remedial Elements Scope of Work |
| Attachment C | Further Remedial Elements Scope of Work |
| Attachment D | Description of the Wet Weather Remedial Element |

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

1.0 INTRODUCTION

1.1 Purpose of the BPSOU SOW

This Statement of Work (BPSOU SOW) sets forth the procedures and requirements for implementing the Work.

1.2 Structure of the BPSOU SOW

- (a) Section 2.0 (Community Involvement) sets forth EPA's and Settling Defendants' (SDs') responsibilities for community involvement.
- (b) Section 3.0 (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified primary deliverables.
- (c) Section 4.0 (Remedial Action) sets forth requirements regarding the completion of the RA, including primary deliverables related to completion of the RA.
- (d) Section 5 (Reporting) sets forth SDs' reporting obligations.
- (e) Section 6 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding SDs' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- (f) Section 7 (Schedules) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the RA.
- (g) Section 8 (State Participation) addresses State participation.
- (h) Section 9.0 (References) provides a list of references, including URLs.

1.3 Scope of the Remedy

The Scope of the Remedy is the response actions described in Section 12 of the 2006 Butte Priority Soils Operable Unit Record of Decision (2006 ROD), and includes the modifications to the Remedy made in Section 3 of the 2011 Explanation of Significant Differences (ESD) and modifications to the Remedy made in Sections 4, 5, and Appendix A of the 2020 ROD Amendment, as further defined in this Section 1.3. The Scope of the Remedy under this Section 1.3 does not include the Remedy for the Railroad Properties or the Residential Solid Media Remedial Action, and EPA will use other enforcement mechanisms to implement those components of the Remedy. The Scope of the Remedy is:

- (a) All actions described in the Further Remedial Elements Scope of Work (Scope of Work, Attachment C [hereinafter Attachment C]). Additional information concerning the Scope of the Remedy as it pertains to acute or chronic in-stream water quality Performance Standards is found in the BPSOU Surface Water Compliance Determination Plan (Attachment A to this BPSOU SOW, [hereinafter Attachment A]);

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (b) Contaminated Solid Media¹-
 - (1) BRES: The construction and maintenance of vegetated caps in a manner consistent with the Butte Reclamation Evaluation System (BRES) at sites impacted by historic mining activities, consistent with desired end land use for that area; and
 - (2) Butte Mine Waste Repository: The expansion, operation, closure and post-closure operation and maintenance of the Butte Mine Waste Repository, and other mine waste repositories developed during RD.
- (c) Contaminated Groundwater
 - (1) Collect contaminated groundwater (alluvial and West Camp bedrock) consistent with the ROD (which includes a groundwater Performance Standard technical impracticability waiver for a defined area, as measured at defined points of compliance, in quantity and in locations sufficient to: (i) support compliance with in-stream surface water Performance Standards (including Replacement Standards), (ii) protect in-stream sediment quality, assessed using the protocols in the Surface Water Management Plan; and (iii) prevent expansion of areas of contaminated groundwater. Treatment of contaminated groundwater is addressed in subparagraph 1.3(e) (Water Treatment) and control and treatment of contaminated groundwater to protect surface water is addressed in subparagraph 1.3(d) (Contaminated Surface Water).
- (d) Contaminated Surface Water
 - (1) Addressing contaminants of concern from historic mining activities, including solid media, and including the control and treatment of contaminated groundwater and the collection and treatment of storm water through the BMPs set forth in this BPSOU SOW and its attachments. This also includes the discharge of collected and treated groundwater as necessary to support compliance with end-of-pipe Performance Standards and in-stream surface water Performance Standards, including Replacement Standards. A more specific definition of the Scope of the Remedy for contaminated surface water, which contains specific Scope of the Remedy parameters for response to an exceedance of in-stream Performance Standards, is described in section 1.3(d)(2) and (3) below.
 - (2) To mitigate exceedances of acute in-stream Performance Standards, the Scope of the Remedy includes the Optimization Elements listed in

¹ The Residential Solid Media Remedial Action component of the Remedy is not addressed in this Partial RD/RA Statement of Work or the Consent Decree. The EPA will use other enforcement mechanisms to implement this component of the Remedy.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

subparagraphs (d)(2)(i) through (d)(2)(iii) only, as described below. Nothing in this BPSOU SOW Section 1.3 prevents the Settling Defendants from considering these Optimization Elements in design, and the elements that are supported by the design engineering analysis will be installed in addition to the Work outlined in Attachment C, to allow for post-construction optimization of the surface water remedy. The Scope of the Remedy does not include major infrastructure modifications except as defined below after KRECCR approval to construct any Optimization Elements (e.g., Multi-Basin Networking) that would require the demolition or reconstruction of previously completed Remedial Elements. The Optimization Elements are:

- (i) Adjustable Diversion and Outlet Structures. Diversion and outlet structures will integrate removable weir plates or stop logs, adjustable screw gates, and/or variable diameter and elevation orifice outlets, as appropriate, to manipulate retained/detained volume and discharge rate at the primary basin discharge point and potentially within each basin's respective forebay.
 - (ii) Basin Segregation. The interior of the basins may be segregated to promote confinement of sediment accumulation, to optimize the treatment flow path, and to enhance future land use. Segregation could be completed by general grading, development of micro-pools, construction of berms or structural walls, or installation of turbidity curtains. As appropriate, adjustable outlet structures would be installed similar to those discussed in Optimization Element 1.
 - (iii) Logic and Controls. Logic and controls will be considered during the final design process. Control and monitoring devices may accommodate automated system adjustment based upon measured surface water quality at each respective BMP discharge and/or at the Silver Bow Creek compliance monitoring point. A supervisory control and data acquisition (SCADA) system with programmable logic controller(s), proportional-integral-derivative (PID) controllers, and communication systems would be installed and networked as needed to provide necessary operational function.
- (3) To mitigate exceedances of chronic in-stream Performance Standards, the Scope of the Remedy includes only:
- (i) Optimization of BPSOU groundwater interception, control and treatment structures and systems in place after Remedy construction, such as system enhancements, installation of extraction wells, and/or expanded interception of impacted groundwater, or enhancement of treatment facility operations;

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (ii) Capping and/or revegetation of an Historic Mine Waste Source within the Corridor, as defined in Section 7.0 of Attachment A; and
 - (iii) Removal of contaminated in-stream sediments, in accordance with the protocols set forth in the BPSOU Surface Water Management Plan, Exhibit 1 of Attachment A (SWMP), determined to be impacted by groundwater in contact with a Historic Mine Waste Source or re-contaminated by a Historic Mine Waste Source, as defined in Section 7.0 in Attachment A, utilizing the diagnostic evaluation process described in the SWMP. Other than removal of in-stream sediments, no removal or excavation of any Historic Mine Waste can be required (the term “Historic Mine Waste Source” is defined in Attachment A). However, the Settling Defendants may propose additional removal or excavation at any time.
- (e) Groundwater Treatment
- (1) Construction and operation of the Butte Treatment Lagoons (BTL System) as the water treatment facility under Remedy to treat contaminated groundwater such that shakedown conditions are met and BTL System Performance Standards presented in Attachment A are not violated.
- (f) Institutional Controls
- (1) The establishment and maintenance of appropriate institutional controls to protect remedial components and to provide notice of remedial activity on the property (e.g., Source Area Property), as generally described in the approved Institutional Controls Implementation and Assurance Plan for the BPSOU (ICIAP) (Appendix E to the Consent Decree);
 - (2) Prevention of domestic and irrigation use of contaminated groundwater by administering the existing Controlled Groundwater Area;
 - (3) Controlling contaminants of concern in storm water by implementing appropriate reporting, stormwater ordinance and permit requirements; and
 - (4) Protecting future owners and occupants from exposure to contaminated solid media using deed restrictions and/or easements at all remediated areas and through enforcement of local ordinances (e.g., *Excavation and Dirt-Moving Protocols for All Dirt-work to be Performed in and Near the Butte Area Superfund Sites*).
- (g) Operation and maintenance of remedy elements
- (1) Developing long-term operations and maintenance plans for all aspects of the remedy with the goal of achieving and thereafter maintaining compliance with the ROD and Performance Standards; and

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (2) Developing and implementing long-term, comprehensive monitoring programs for surface water (including storm water), groundwater, and reclamation areas.

1.4 Relation to Previously Completed BPSOU Site Work

Settling Defendants have previously completed approved remedial activities at the BPSOU pursuant to the existing unilateral administrative order titled “Administrative Order for Partial Remedial Design/Remedial Action Implementation and Certain Operation and Maintenance Activities at the Butte Priority Soils Operable Unit, EPA Docket No. CERCLA-08-2011-0011”, issued on July 20, 2011 (2011 Order). This BPSOU SOW is intended to facilitate the continuation of BPSOU remedial activities, obligations and requirements contained in the “Partial Remedy Implementation Work Plan” (2011 WP), attached to the 2011 Order, including previously completed work plans or other deliverables. All Responsible Party and Group 1 Responsible Party plans or deliverables previously approved by EPA, in consultation with DEQ, pursuant to the 2011 Order and the 2011 PRI Work Plan are incorporated by reference (see Attachment B, 2019 Status of 2011 PRI Work Plan Requirements [hereinafter Attachment B]) and are fully enforceable under this BPSOU SOW, except for approved Residential Solid Media Remedial Action work plans, which are outside this BPSOU SOW. Certain pending Responsible Party and Group 1 Responsible Party deliverables under the 2011 PRI Work Plan are also requirements of this BPSOU SOW and are subject to the agency review and approval requirements of the Consent Decree and this BPSOU SOW. Those requirements and obligations are described in Attachment B.1, Ongoing Remedial Elements Scope of Work (hereinafter Attachment B.1.).

1.5 Ongoing Remedial Elements

Certain remedy components described in the ROD have been partially or completely implemented. The status of these components is described in Attachment B, and ongoing remedial element requirements are contained in Attachment B.1. Certain Work required under the 2011 WP is ongoing and is generally described below:

- (a) Solid Media
 - (1) Residential Contamination
 - (i) Residential Solid Media Remedial Action, currently implemented through the RMAP Implementation (not Work for purposes of this Consent Decree)
 - (2) Non-Residential Solid Media Program
 - (i) BRES Program
- (b) Groundwater
 - (1) Groundwater (GW) Management Plan
 - (i) Site-wide Groundwater Monitoring
 - (ii) Controlled Groundwater Area Monitoring
 - (iii) Groundwater Load Monitoring for the BPSOU Subdrain

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (iv) Butte Treatment Lagoons, West Camp, and BPSOU Subdrain Groundwater Capture System Operation, Maintenance and Monitoring
- (2) BPSOU Subdrain Groundwater Management Report
- (3) Localized Groundwater Study
- (4) Butte Reduction Works Groundwater and Surface Water Monitoring
- (c) Surface Water
 - (1) Surface Water Management Plan
 - (i) Site-wide Surface Water Monitoring
- (d) Institutional Controls/Historic Preservation Requirements
 - (1) Monitor and Enforcement
 - (i) Settling Defendants' ICIAP (Appendix E to the Consent Decree);
 - (ii) Controlled Groundwater Area Requirements
 - (iii) Historic Preservation Programmatic Agreements (1st and 2nd)
 - (iv) Applicable County Ordinances
 - (v) Deed Restrictions
- (e) Operations and Maintenance (O&M) and Management Plans – the following are a list of documents in progress or development, or previously approved O&M Plans.
 - (1) Butte Treatment Lagoons (BTL), West Camp, and BPSOU Subdrain Groundwater Capture System – Draft submitted by the SDs - under review by the agencies.
 - (2) BRES Sites – Draft submitted by SDs; Agencies have partially reviewed and further BRES-related documents that are part of the Solid Media Management Plan will be submitted for agency review and approval.
 - (3) Mine Waste Repository – Approved on September 23, 2015.
 - (4) Granite Mountain Memorial Interpretive Area (GMMIA) – Included in the Mine Waste Repository O&M Manual that was approved on September 23, 2015.
 - (5) Syndicate Pit - Included in the Stormwater System O&M Plan that was approved on August 6, 2018.
 - (6) BPSOU Subdrain Evaluation Report and BPSOU Subdrain Optimization Report – to be prepared by SDs for EPA approval, in consultation with DEQ, after relevant remedial work is completed.
 - (7) Superfund Stormwater System O&M Plan – Approved August 7, 2018.
 - (8) Butte Silver Bow County (BSBC) Street Maintenance and Snow Management Plan – Draft submitted by SDs; Agency comments have been provided to SDs, and revised draft shall be submitted for Agency review and approval.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (9) Missoula Gulch Catch Basins (CB-1, CB-8 and CB-9) – Approved on July 19, 2018. This is an appendix to the Superfund Stormwater System O&M Plan that was approved on August 7, 2018.
- (10) Silver Bow Creek above the confluence with Blacktail Creek (formerly known as the Metro Storm Drain (MSD)) Channel O&M Plan - Draft due from the SDs.
- (11) RARUS Railway BPSOU Superfund O&M Plan – draft submitted by SDs for Agency review and approval; under review by the agencies.

Attachment B.1 to this BPSOU SOW, describes the requirements and criteria for all the remedial actions listed in this section and is incorporated into this BPSOU SOW by reference.

1.6 Further Remedial Elements to be Implemented

In order to complete the BPSOU remedy, the following remaining remedial elements shall be implemented. These are subject to remedial design requirements described in Section 3 and the remedial action requirements described in Section 4. These include:

- (a) Diggings East Stormwater Basin Area;
- (b) Buffalo Gulch Stormwater Basin(s);
- (c) Northside Tailings / East Buffalo Gulch Area;
- (d) Grove Gulch Sedimentation Bay;
- (e) Blacktail Creek Remediation and Contaminated Groundwater Hydraulic Control;
- (f) Butte Reduction Works Smelter Area Mine Waste Remediation and Contaminated Groundwater Hydraulic Control;
- (g) Insufficiently Reclaimed Source Areas;
- (h) Unreclaimed Solid Media Sites; and
- (i) Uncontrolled Surface Flow Area BMPs.

Attachment C to this BPSOU SOW, describes the overall requirements and criteria for these actions and is incorporated into this BPSOU SOW by reference. Section 5 of Attachment C, Blacktail Creek Remediation and Contaminated Groundwater Hydraulic Control, describes specific remedial activities in the Blacktail Creek area to be performed by DEQ. The requirements for implementation of BTC Riparian Actions are further described in Exhibit H to the Consent Decree, BTC Riparian Actions Outline.

Items (a) through (d) and item (i) above constitute the remaining portions of the Wet Weather Remedy component described in the ROD. The information and terms found in Attachment D to this BPSOU SOW, Description of Wet Weather Remedial Element, describe this element in more detail and is also incorporated into this BPSOU SOW by reference.

1.7 DEQ Participation

Consistent with relevant provisions of CERCLA, EPA will consult with DEQ in making all significant decisions regarding the requirements of the Consent Decree and this BPSOU SOW. References to any EPA approval in this BPSOU SOW

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

therefore means that the approval is by EPA *in consultation with the DEQ*, even when DEQ is not explicitly mentioned. The Parties shall accordingly ensure that DEQ has a reasonable opportunity (not to exceed thirty days) to review and comment upon all deliverables to ensure that it can meet its consultation obligation in a timely fashion.

1.8 BPSOU Site Decision Documents

- (a) 2006 BPSOU ROD – Record of Decision, Butte Priority Soils Operable Unit, September 2006.
- (b) 2011 ESD - Explanation of Significant Differences to the 2006 Butte Priority Soils Operable Unit Record of Decision, July 2011.
- (c) 2020 ROD Amendment, November 2020.

1.9 Definitions and Abbreviations

The terms used in this BPSOU SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Consent Decree (CD), have the meanings assigned to them in CERCLA, in such regulations, or in the CD, except that the term “Paragraph” or “¶” used in this document means a paragraph of the BPSOU SOW, and the term “Section” used in this document means a section of the BPSOU SOW, unless otherwise stated.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

2.0 COMMUNITY INVOLVEMENT

2.1 Community Involvement Responsibilities

- (a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. EPA developed a Community Involvement Plan (CIP) in 2003 for the Site and updated the CIP again in 2013. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Work that are not already addressed or provided for in the existing CIP. Butte Citizens Technical Environmental Committee (CTEC) has been funded by a Technical Assistance Grant since the late 1980s and its continuing role will be addressed in any revised CIP.
- (b) If requested by EPA, SDs, and DEQ for DEQ-designated work only, shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. SDs' support of EPA's community involvement activities may also include providing online access to initial submissions and updates of deliverables to:
 - (1) Any Community Advisory Groups,
 - (2) Any Technical Assistance Grant recipients and their advisors, and
 - (3) Other entities named by EPA to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP SDs' responsibilities for community involvement activities. All community involvement activities conducted by SDs at EPA's request are subject to EPA's oversight. EPA previously provided on-site administrative records for the 2006 ROD and the 2011 ESD. EPA shall maintain an on-site administrative record for the 2020 Record of Decision Amendment at the local document repository designated for that administrative record, which is Montana Tech Library, 1300 W. Park Street, Butte MT 59701. That repository shall also house the ongoing record of documents generated under this BPSOU SOW, and all deliverables required under this BPSOU SOW shall be copied to this address. The SDs, and DEQ for DEQ-designated Work only, shall also send a copy of any document or record generated under this BPSOU SOW to the CTEC offices in Butte, P.O. Box 593, Butte, MT 59703.
- (c) **SDs' Community Involvement Coordinator.** If requested by EPA, SDs shall, within 30 days of a request, designate and notify EPA of SDs' Community Involvement Coordinator (SDs' CI Coordinator). SDs may hire a contractor for this purpose. SDs' notice must include the name, title, and qualifications of the SDs' CI Coordinator. SDs' CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries to EPA about the BPSOU.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

3.0 REMEDIAL DESIGN

3.1 RD Work Plans

The obligations described in Section 3.0 apply to work elements described in Section 1.6 (a) through (f) and (i) above. Remedial design obligations and deliverables for work elements described in Section 1.6 (g) and (h) are described in Attachment C, Sections 7 and 8. Remedial design obligations and deliverables for work elements described in Section 1.5 above are described in Attachment B.1.

- (a) SDs shall submit Remedial Design (RD) Work Plans (RDWPs) for EPA approval, in consultation with DEQ for each of the remedial elements listed in Section 1.6 (a) through (f) and (i). Each of the remedial elements listed in Section 1.6 are included in Attachment C of this BPSOU SOW. The RDWPs must include: Plans for implementing all RD activities identified in this BPSOU SOW, and Attachment C, or required by EPA, in consultation with DEQ, to be conducted to develop the RD;
- (b) A description of the overall management strategy for performing the RD, including a proposal for phasing of design and construction, if applicable;
- (c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action (RA) as necessary to implement the Work;
- (d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;
- (e) Descriptions of any areas requiring clarification and/or anticipated problems (e.g., data gaps);
- (f) Description of any proposed pre-design investigation;
- (g) Description of any proposed treatability study (if required);
- (h) Descriptions of any applicable permitting requirements and other regulatory requirements;
- (i) Description of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and
- (j) Appropriate reference to the following supporting deliverables described in ¶ 6.7 (Supporting Deliverables): Site-Wide Health and Safety Plan; Site-Wide Emergency Response Plan; and Site-Wide Quality Assurance Project Plans.

3.2 Periodic Meetings

During the RD process, SDs shall meet regularly with EPA and DEQ to discuss design issues as necessary, as directed or determined by EPA, in consultation with DEQ.

3.3 Pre-Design Investigations

The purpose of the Pre-Design Investigation (PDI) is to address data gaps by conducting additional field investigations. Several investigations are identified in Attachment C and will be identified in the RDWPs, and it is anticipated that additional data gaps may be identified during design that require investigation. The following presents general requirements for pre-design investigations.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (a) **PDI Work Plan.** SDs shall submit a PDI Work Plan (PDIWP) for EPA approval, in consultation with DEQ. The PDIWP must include:
 - (1) An evaluation and summary of existing data and description of data gaps;
 - (2) A sampling plan including media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), and number of samples; and
 - (3) Cross references to quality assurance/quality control (QA/QC) requirements set forth in the Quality Assurance Project Plan (QAPP) and as described in Section X (Quality Assurance, Sampling and Data Analysis) of the Consent Decree.
- (b) Following the PDI, SDs shall submit a PDI Evaluation Report, for EPA approval, in consultation with DEQ. This report must include:
 - (1) Summary of the investigations performed;
 - (2) Summary of investigation results;
 - (3) Summary of validated data (i.e., tables and graphics);
 - (4) Data validation reports and laboratory data reports;
 - (5) Narrative interpretation of data and results;
 - (6) Results of statistical and modeling analyses, if completed;
 - (7) Photographs documenting the work conducted, if required or voluntarily obtained; and
 - (8) Conclusions and recommendations for RD, including design parameters and criteria.
- (c) EPA, in consultation with DEQ, may require SDs to supplement the PDI Evaluation Report and/or to perform additional pre-design studies.

3.4 Preliminary (30%) RDs

SDs shall submit a Preliminary (30%) RD for EPA's comment, in consultation with DEQ. The Preliminary RD must include:

- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
- (b) Preliminary drawings;
- (c) Descriptions of permit requirements, if applicable;
- (d) Any proposed revisions to the RA Schedule that is set forth in ¶ 7.3 (RA Schedule); and
- (e) Updates of all supporting deliverables required to accompany the RDWP.

3.5 Intermediate (60%) RDs

SDs shall submit the Intermediate (60%) RD for EPA's comment, in consultation DEQ. The Intermediate RD must:

- (a) Be a continuation and expansion of the Preliminary RD;
- (b) Address EPA's comments regarding the Preliminary RD; and
- (c) Include specifications (as available) and the same elements as are required for the Preliminary (30%) RD.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

3.6 Pre-Final (95%) RDs.

SDs shall submit the Pre-final (95%) RD for EPA's comment, in consultation with DEQ. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments regarding the Intermediate RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:

- (a) A complete set of construction drawings and specifications that are:
 - (1) Certified by a registered professional engineer;
 - (2) Suitable for procurement; and
 - (3) Follow the most current edition of the Construction Specifications Institute's Master Format;
- (b) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;
- (c) Pre-Final versions of the same elements and deliverables as are required for the Preliminary/Intermediate RD;
- (d) A specification for photographic documentation of the RA;
- (e) Preliminary Operation and Maintenance (O&M) Plan and O&M Manual;
- (f) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009);
- (g) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (h) Any proposed revisions to the RA Schedule that is set forth in ¶ 7.3 (RA Schedule); and
- (i) Updates of all supporting deliverables required to accompany the Preliminary (30%) RD.

3.7 Final (100%) RDs

SDs shall submit the Final (100%) RD for EPA approval, in consultation with DEQ. The Final RD must address EPA comments on the Pre-final RD and must include final versions of all Pre-final RD deliverables.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

4.0 REMEDIAL ACTION

4.1 RA Work Plans

The obligations described in Section 4.0 apply to work elements described in Section 1.6 (a) through (f) and (i) above. Remedial Action obligations and deliverables for work elements described in Section 1.6 (g) and (h) are described in Attachment C, Sections 7 and 8. Remedial Action obligations and deliverables for work elements described in Section 1.5 above are described in Attachment B.1.

- (a) SDs shall submit a RA Work Plan (RAWP) for EPA approval that includes:
- (1) A proposed RA Construction Schedule that integrates and sequences construction of work elements described in Section 1.6 above, and presents construction milestone dates in a Gantt chart format;
 - (2) If necessary, an updated health and safety plan that covers activities during the RA; and
 - (3) Plans for satisfying any permitting requirements, including obtaining permits for off-site activity, and for satisfying the substantive requirements of permits for on-site activity.

4.2 Implementation and Construction of Work Elements Included in the Remedial Designs

SDs shall perform and implement all work included in the approved Final (100%) Remedial Designs and as described in the RA Work Plans.

4.3 Meetings and Inspections

- (a) **Preconstruction Conference.** Before performing any Work required of the SDs in Attachment C, SDs shall hold a preconstruction conference with EPA and others as directed or approved by EPA, in consultation with DEQ and as described in the Remedial Design/Remedial Action Handbook, EPA 540/R-95/059 (June 1995). SDs shall prepare an agenda and minutes of the conference and shall distribute an agenda prior to the conference and the minutes after the conference to all Parties.
- (b) **Periodic Meetings.** During the construction portion of the RA (RA Construction), SDs shall meet weekly with EPA and DEQ, and others as directed or determined by EPA, to discuss construction issues. Modifications to Work activities may be documented through a Request for Change (RFC) submitted and signed by SDs and approved by the EPA's project representatives, done in consultation with DEQ, and notations in the daily log. SDs shall distribute an agenda and list of attendees to all Parties prior to each meeting. SDs shall prepare minutes of the meetings and shall distribute the minutes to all Parties.
- (c) **Inspections**
- (1) EPA or its contractor shall conduct periodic inspections of the Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its contractor during inspections.
 - (2) If needed: SDs shall provide office space in the form of an available desk for EPA personnel to perform their oversight duties.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (3) If needed: SDs shall provide personal protective equipment needed for EPA personnel and any oversight officials to perform their oversight duties.
- (4) Upon notification by EPA of any deficiencies in the RA Construction, SDs shall take all necessary steps to correct the deficiencies and/or bring the RA Construction into compliance with the approved Final RD, any approved design changes, and/or the approved RAWP. If applicable, SDs shall comply with any schedule provided by EPA in its notice of deficiency.

4.4 Emergency Response and Reporting

- (a) **Emergency Response and Reporting.** If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, SDs shall:
 - (1) Immediately take all appropriate action to prevent, abate, or minimize such release or threat of release;
 - (2) Immediately notify the authorized EPA officer (as specified in ¶ 4.4(c)) orally; and
 - (3) Take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the applicable Health and Safety Plan, the applicable Emergency Response Plan, and any other deliverable approved by EPA, in consultation with DEQ under the BPSOU SOW.
- (b) **Release Reporting.** Upon the occurrence of any event during performance of the Work that SDs are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, SDs shall immediately notify the authorized EPA officer orally.
- (c) The “authorized EPA Remedial Project Manager (RPM)” for purposes of immediate oral notifications and consultations under ¶ 4.4(a) and ¶ 4.4(b) is the EPA RPM, the EPA Alternate RPM (if the EPA RPM is unavailable), or the EPA Emergency Response Unit, Region 8 (if neither EPA RPM is available).
- (d) For any event covered by ¶ 4.4(a) and ¶ 4.4(b), SDs shall:
 - (1) Within 14 days after the onset of such event, submit a report to EPA and DEQ describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and
 - (2) Within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.
- (e) The reporting requirements under ¶ 4.4 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

4.5 Off-Site Shipments

- (a) SDs may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. SDs will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if SDs obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) SDs may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available:
 - (1) The name and location of the receiving facility;
 - (2) The type and quantity of Waste Material to be shipped;
 - (3) The schedule for the shipment; and
 - (4) The method of transportation. SDs also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. SDs shall provide the notice after the award of the contract for RA construction and before the Waste Material is shipped.
- (c) SDs may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.6 RA Construction Completion.

The obligations and deliverables described in this Section 4.6 are those of the SDs only, and apply when all Remedial Action described in this BPSOU SOW is complete, except as explicitly noted below.

- (a) For purposes of this ¶ 4.6, "RA Construction" comprises, for any RA that involves the construction and operation of a system or a monitoring period to achieve Performance Standards (for example, groundwater or surface water remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.
- (b) **Inspection of Constructed Remedy.** SDs shall schedule an inspection to review the construction and operation of the systems and to review whether the systems are functioning properly and as designed. The inspection must be

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

attended by SDs, DEQ and EPA and/or their representatives. A re-inspection must be conducted if requested by EPA.

- (c) **Shakedown Period.** There shall be shakedown periods for certain Work elements as described in Attachment A to this BPSOU SOW.
- (d) **RA Construction Completion Report (CCR).** Following the shakedown periods, SDs shall submit an “RA CCR” requesting EPA’s determination that RA Construction (excluding on-going RMAP-related activities) has been completed. The RA CCR must:
 - (1) Include statements by a registered professional engineer and by SDs’ Project Coordinator that construction of the system is complete, and that the system is functioning properly and as designed;
 - (2) Include a demonstration, and supporting documentation, that construction of the system is complete, and that the system is functioning properly and as designed;
 - (3) Include as-built drawings signed and stamped by a registered professional engineer;
 - (4) Be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA’s *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017); and
 - (5) Be certified in accordance with ¶ 6.5 (Certification).
- (e) If EPA determines that RA Construction is not complete, EPA shall so notify SDs. EPA’s notice must include a description of, and schedule for, the activities that SDs must perform to complete RA Construction. EPA’s notice may include a schedule for completion of such activities or may require SDs to submit a proposed schedule for EPA approval. SDs shall perform all activities described in the EPA notice in accordance with the schedule, which schedule may be modified by agreement of SDs and EPA, in consultation with DEQ.
- (f) If EPA determines, based on the initial or any subsequent RA CCR, that RA Construction is complete, EPA shall so notify SDs.
- (g) In addition to the RA CCR Report, when RA Construction of all elements identified in Section 1.6 is complete, a key remedial elements construction completion report (KRECCR) shall be prepared by SDs in accordance with Attachment A and submitted to the EPA for review and approval, in consultation with DEQ.
- (h) The Compliance Standard Determination Period will begin after approval of the KRECCR.

4.7 Certification of RA Completion

- (a) **RA Completion Inspection.** The RA is “Complete” for purposes of this ¶ 4.7 when construction of the RA has been fully performed and the Performance Standards (including Replacement Standards identified in Attachment A to this BPSOU SOW) have been attained. For purposes of this Consent Decree, in-stream Performance Standards have been attained when:

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (1) Performance Standards for in-stream chronic conditions have been attained consistently over a two-year period at any time after approval of the KRECCR; and
 - (2) Performance Standards for in-stream acute conditions either:
 - (i) have been attained consistently during a series of two consecutive spring and summer seasonal periods at any time after approval of the KRECCR; or
 - (ii) have not been attained consistently during a series of two consecutive spring and summer seasonal periods at any time after approval of the KRECCR, but the SDs demonstrate that all BPSOU stormwater control features required under this Consent Decree were functioning as designed and were operated in accordance with all relevant O&M plans during that same period and SDs provide a reasonable basis for attributing, at least in part, the exceedance(s) to one or more sources other than pre-1980 historic mining waste sources within the BPSOU.
 - (3) SDs shall schedule an inspection for the purpose of obtaining EPA's Certification of RA Completion. The inspection must be attended by SDs and EPA and/or their representatives.
- (b) **RA Completion Report.** Following the inspection and/or following the Compliance Standard Determination Period and EPA's Compliance Determination, as those terms are defined in described in Attachment A, SDs shall submit an RA Completion Report to EPA requesting EPA's Certification of RA Completion. The report must:
- (1) Include certifications by a registered professional engineer and by SD's Project Coordinator that the RA is complete;
 - (2) Be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011), as supplemented by *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017);
 - (3) Contain monitoring data to document post-RA surface water quality; and
 - (4) Be certified in accordance with ¶ 6.5 (Certification).
- (c) If EPA concludes that the RA is not Complete or remedial goals have not been obtained, except acute in-stream surface water quality Performance Standards as provided in ¶ 4.7(a) above, EPA shall so notify SDs. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require SDs to submit a schedule for EPA, in consultation with DEQ approval. SDs shall perform such activities that are described in the notice in accordance with the schedule, which schedule may be modified by agreement of SDs and EPA, in consultation with DEQ.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (d) If EPA, in consultation with DEQ concludes, based on the initial or any subsequent Monitoring Report requesting Certification of RA Completion, that the RA is Complete, EPA shall so certify to SDs. This certification will constitute the Certification of RA Completion for purposes of the CD, including Section XVII of the CD (Covenants and Reservations by the U.S. and the State). Certification of RA Completion will not affect SDs' remaining obligations under the CD.

4.8 Periodic Review Support Plan (PRSP)

SDs shall submit the PRSP for EPA approval, in consultation with DEQ, upon request by EPA. The PRSP addresses the studies and investigations that SDs shall conduct to support EPA's reviews of whether the RA is protective of human health and the environment in accordance with Section 121(c) of CERCLA, 42 U.S.C. § 9621(c) (also known as "Five-year Reviews"). SDs shall develop the plan in accordance with *Comprehensive Five-year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant five-year review guidances.

4.9 Certification of Work Completion

- (a) **Work Completion Inspection.** Upon completion of all Work, SDs shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion. The inspection must be attended by SDs and EPA and/or their representatives.
- (b) **Work Completion Report.** Following the inspection, SDs shall submit a report to EPA requesting EPA's Certification of Work Completion. The report must:
 - (1) Include certifications by a registered professional engineer and by SDs' Project Coordinator that the Work, including all O&M activities, is complete; and
 - (2) Be certified in accordance with ¶ 6.5 (Certification). If the Monitoring Report submitted under ¶ 4.7(b) includes all elements required under this ¶ 4.9(b), then the Monitoring Report suffices to satisfy all requirements under this ¶ 4.9(b).
- (c) If EPA concludes that the Work is not complete, EPA shall so notify SDs. EPA's notice must include a description of the activities that SDs must perform to complete the Work. EPA's notice must include specifications and a schedule for such activities or must require SDs to submit specifications and a schedule for EPA approval. SDs shall perform all activities described in the notice or in the EPA-approved specifications and schedule, which schedule may be modified by agreement of SDs and EPA, in consultation with DEQ.
- (d) If EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, EPA shall so certify in writing to SDs. Issuance of the Certification of Work Completion does not affect the following continuing obligations:

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (1) Activities under the Periodic Review Support Plan;
- (2) Obligations under Sections XI (Access and Institutional Controls, XXI (Retention of Records), and XX (Access to Information) of the CD;
- (3) Institutional Controls obligations as provided in the Institutional Control Implementation and Assurance Plan; and
- (4) Reimbursement of EPA's Future Response Costs under Section VI (Payment of Response Costs) of the CD.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

5.0 REPORTING

5.1 Progress Reports

Commencing with the month following lodging of the CD and until EPA approves the RA Construction Completion, SDs shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

- (a) The actions that have been taken toward achieving compliance with the CD;
- (b) A summary of all results of sampling, tests, and all other data received or generated by SDs;
- (c) A description of all deliverables that SDs submitted to EPA;
- (d) A description of all activities relating to RA Construction that are scheduled for the next six weeks;
- (e) An updated RA Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- (f) A description of any modifications to the work plans or other schedules that SDs have proposed or that have been approved by EPA; and
- (g) A description of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next six weeks.

5.2 Notice of Progress Report Schedule Changes.

If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 5.1(d), changes, SDs shall notify EPA of such change at least 4 days before performance of the activity, unless emergency or force majeure conditions make such a notice infeasible.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

6.0 DELIVERABLES

6.1 Applicability

SDs shall submit deliverables for EPA approval or for EPA comment, in consultation with DEQ, as specified in this BPSOU SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 6.2 (In Writing) through 6.4 (Technical Specifications) apply to all deliverables. Paragraph 6.5 (Certification) applies to the deliverables described in Paragraphs 4.6, 4.7 and 4.9. Paragraph 6.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

6.2 In Writing

As provided in Paragraph 115 of the CD, all deliverables under this BPSOU SOW must be in writing unless otherwise specified.

6.3 General Requirements for Deliverables

All deliverables must be submitted by the deadlines in the RD Schedule or RA Schedule, as applicable. SDs shall submit all deliverables to EPA in electronic form to the EPA and DEQ contacts listed in Paragraph 115 of the CD. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 6.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA RPM. If any deliverable includes maps, drawings, or other exhibits that are larger than 11.5" by 17" SDs shall also provide EPA with paper copies of such exhibits.

6.4 Technical Specifications

- (a) Sampling and monitoring data should be submitted in the most recent or the current at the time of generation standard U.S. EPA Region 8 Electronic Data Deliverable (EDD) format. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.
- (b) Spatial data, including spatially-referenced data and geospatial data, should be submitted:
 - (1) In the ESRI File Geodatabase format; and
 - (2) As unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://www.epa.gov/geospatial/epa-metadata-editor>.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
- (d) Spatial data submitted by SDs does not, and is not intended to, define the boundaries of the Site.

6.5 Certification

All deliverables that require compliance with this ¶ 6.5 (i.e., that must be Certified) must be signed by the SDs' Project Coordinator, or other responsible official of SDs, and must contain the following statement:

I certify under penalty of law that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or who are directly responsible for authoring the relevant document, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate and complete. I am aware that there are significant penalties for submitting false information.

6.6 Approval of Deliverables

(a) Initial Submissions

- (1) After review of any deliverable that is required to be submitted for EPA approval under the CD or the BPSOU SOW, EPA shall:
 - (i) Approve, in whole or in part, the submission;
 - (ii) Approve the submission upon specified conditions;
 - (iii) Disapprove, in whole or in part, the submission; or
 - (iv) Any combination of the foregoing.
- (2) EPA also may modify the initial submission to cure deficiencies in the submission if:
 - (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or
 - (ii) Previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions.** Upon receipt of a notice of disapproval under ¶ 6.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 6.6(a), SDs shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may:

- (1) Approve, in whole or in part, the resubmission;
- (2) Approve the resubmission upon specified conditions;

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (3) Modify the resubmission;
 - (4) Disapprove, in whole or in part, the resubmission, requiring SDs to correct the deficiencies; or
 - (5) Any combination of the foregoing.
- (c) **Implementation.** Upon approval, approval upon conditions, or modification by EPA under ¶ 6.6(a) (Initial Submissions) or ¶ 6.6(b) (Resubmissions), of any deliverable, or any portion thereof:
- (1) Such deliverable, or portion thereof, will be incorporated into and enforceable under the CD; and
 - (2) SDs shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 6.6(a) or ¶ 6.6(b) does not relieve SDs of any liability for stipulated penalties under Section XVI (Stipulated Penalties) of the CD.

6.7 Supporting Deliverables

SDs shall submit each of the following supporting deliverables for EPA, in consultation with DEQ approval, except as specifically provided. SDs shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 9.0 (References)). SDs shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by EPA.

- (a) **Updated Site-Specific Health and Safety Plan.** The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Work. SDs have developed and the agencies accept the BPSOU Site-wide HASP as conforming with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP covers RD activities and shall be, as appropriate, updated to cover activities during the RA and updated to cover activities after RA completion. EPA does **not** approve the HASP, but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Site-Specific Emergency Response Plan.** The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The HASP includes an ERP that generally covers BPSOU. SDs contractors shall prepare an ERP specific to the project area in which each performs work activities. The ERP must include:
 - (1) Name of the person or entity responsible for responding in the event of an emergency incident;
 - (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;
 - (4) Notification activities in accordance with ¶ 4.4(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and
 - (5) A description of all necessary actions to ensure compliance with Paragraph 25 (Emergencies and Releases for Settling Defendants) of the CD in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Site-Wide Construction Quality Assurance/Construction Quality Control (CQA/CQC) Plans.** The purpose of the Construction Quality Assurance (CQA) Plan is to describe planned and systemic activities that provide confidence that the RA construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the Construction Quality Control (CQC) Plan is to describe the activities to verify that RA construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQA/CQC Plans prepared for each of the work elements described in Section 1.6 above must:
- (1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/CQC Plans;
 - (2) Describe the Performance Standard (PS) required to be met to achieve Completion of the RA;
 - (3) Describe the activities to be performed:
 - (i) To provide confidence that PS will be met; and
 - (ii) To determine whether PS have been met;
 - (4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/CQC Plans;
 - (5) Describe industry standards and technical specifications used in implementing the CQA/CQC Plans;
 - (6) Describe procedures for tracking construction deficiencies from identification through corrective action;
 - (7) Describe procedures for documenting all CQA/CQC activities; and
 - (8) Describe procedures for retention of documents and for final storage of documents.
- (d) **Submittal Tracking Database.** A submittal tracking database shall be used as a tracking system for all deliverables required under this BPSOU SOW.
- (e) **Quality Management Plan.** A quality management plan (QMP) was approved by EPA in consultation with DEQ on June 1, 2018. The QMP describes the quality system in terms of organizational structure, functional

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted by the SDs. The quality system provides the framework for planning, implementing, documenting, and assessing work performed by the SDs and for carrying out required QA and QC activities. The QMP will be updated and revised on an annual basis and submitted to EPA for review and approval by EPA in consultation with DEQ.

- (f) **Data Management Plan.** A data management plan (DMP) was approved by EPA in consultation with DEQ on June 28, 2018. The data management plan shall identify and document the requirements and responsibilities for managing and using data and information generated from O&M or OMM activities (e.g., environmental data, submittal tracking). The DMP will be updated and revised on an annual basis and submitted to EPA for reviewed and approval by EPA in consultation with DEQ.
- (g) **O&M Plan(s).** The O&M Plans listed in Section 1.5 above, listed in Attachment B.1. and for each remedial element or group of remedial elements, except those described in Section 1.6(g) and (h) which are addressed in the BRES O&M Plan, are required. The O&M Plans shall describe the requirements for inspecting, operating, and maintaining the RA. SDs shall develop the O&M Plans in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must also include the following additional requirements:
 - (1) Description of PS required to be met to satisfy the ROD;
 - (2) Description of activities to be performed:
 - (i) to provide confidence that PS will be met; and
 - (ii) to determine whether PS have been met;
 - (3) O&M Reporting. Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
 - (4) Description of corrective action in case of systems failure, including:
 - (i) Alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS;
 - (ii) Analysis of vulnerability and additional resource requirements should a failure occur;
 - (iii) Notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and
 - (iv) Community notification requirements; and
 - (5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (h) **O&M Manual.** The O&M Manual shall be developed if needed, as determined by EPA in consultation with DEQ. The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. SDs shall develop the O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).
- (i) **Wetlands ARAR Compliance Report.** At the time the KRECCR is submitted, the SDs shall also submit this report. The Wetlands ARAR Compliance Report shall describe compliance with the no-net loss of wetlands requirement, using the four-step methodology previously approved by EPA. See *Summary of Four-Step Process, Addressing Wetlands Issues in Upper Clark Fork River, Superfund Sites, Letter from Ms. Sandra Stash, ARCO, Anaconda, MT to Mr. Donald Pizzini and Mr. Robert Fox, USEPA, Helena, MT. January 27, 1992.*
- (j) **Historical Preservation Act Compliance Report.** At the time the KRECCR is submitted, the SDs shall also submit this report. The Historical Preservation Act Compliance Report shall describe compliance with this ARAR by listing identified eligible or protected historical resources within the BPSOU and the efforts to either avoid or mitigate any adverse impacts to those resources. The report may reference the list of eligible or protected historical resources identified in Section 5.7 of the 2006 ROD, and may also reference the 1st and 2nd Programmatic Agreements including the attachments to the 2nd Programmatic Agreement, which describe efforts to avoid or mitigate adverse impacts to these resources, and the status of the implementation of these efforts.
- (k) **Institutional Controls Implementation and Assurance Plan.** The Institutional Controls Implementation and Assurance Plan (ICIAP) describes plans to implement, maintain, and enforce the Institutional Controls (ICs) at the Site. This plan has been approved and is attached to the CD as Appendix E.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

7.0 SCHEDULES

7.1 Applicability and Revisions

All deliverables and tasks required under this BPSOU SOW must be submitted or completed by the deadlines or within the time durations listed in the RD and RA Schedules for the Further Remedial Elements set forth below. SDs may submit proposed revised RD Schedules or RA Schedules for EPA approval. Upon EPA's approval, the revised RD and/or RA Schedules supersede the RD and RA Schedules set forth below, and any previously-approved RD and/or RA Schedules.

7.2 RD and RA Schedules

RD and RA Schedules for the Further Remedial Elements is shown as Exhibit 1 to this document.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

8.0 STATE PARTICIPATION

8.1 Copies

SDs shall, at any time they send a deliverable to EPA, send a copy of such deliverable to DEQ and the Montana Natural Resource Damage Program. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to SDs, send a copy of such document to DEQ and the Montana Natural Resource Damage Program.

8.2 Review and Comment

For SD submittals and deliverables, DEQ will have a reasonable opportunity for review and comment prior to:

- (a) Any EPA approval or disapproval under ¶ 6.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and
- (b) Any approval or disapproval of the Construction Phase under ¶ 4.6 (RA Construction Completion), any disapproval of, or Certification of RA Completion under ¶ 4.7 (Certification of RA Completion), and any disapproval of, or Certification of Work Completion under ¶ 4.9 (Certification of Work Completion).

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

9.0 REFERENCES

9.1 Regulations and Guidance Documents.

The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 9.2:

- (a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
- (b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).
- (c) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
- (d) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr. 1990).
- (e) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (f) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (g) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (h) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).
- (i) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).
- (j) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).
- (k) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (l) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).
- (m) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540-R-01-007 (June 2001).
- (n) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).
- (o) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).
- (p) Quality management systems for environmental information and technology programs -- Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).
- (q) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (r) Superfund Community Involvement Handbook, SEMS 100000070 (January 2016), <https://www.epa.gov/superfund/community-involvement-tools-and-resources>.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (s) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (t) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (u) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (v) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), <https://www.epa.gov/geospatial/geospatial-policies-and-standards> and <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (w) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).
- (x) Principles for Greener Cleanups (Aug. 2009), <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (y) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).
- (z) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).
- (aa) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).
- (bb) Construction Specifications Institute’s Master Format, available from <https://www.csiresources.org/home>.
- (cc) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).
- (dd) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).
- (ee) EPA’s Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), <https://www.epaosc.org/HealthSafetyManual/manual-index.htm>.
- (ff) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (gg) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).
- (hh) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), <https://www.epa.gov/superfund/superfund-post-construction-completion>.

9.2 EPA Web Pages

A more complete list may be found on the following EPA Web pages:

- (a) Laws, Policy, and Guidance: <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>
- (b) Test Methods Collections: <https://www.epa.gov/measurements/collection-methods>

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

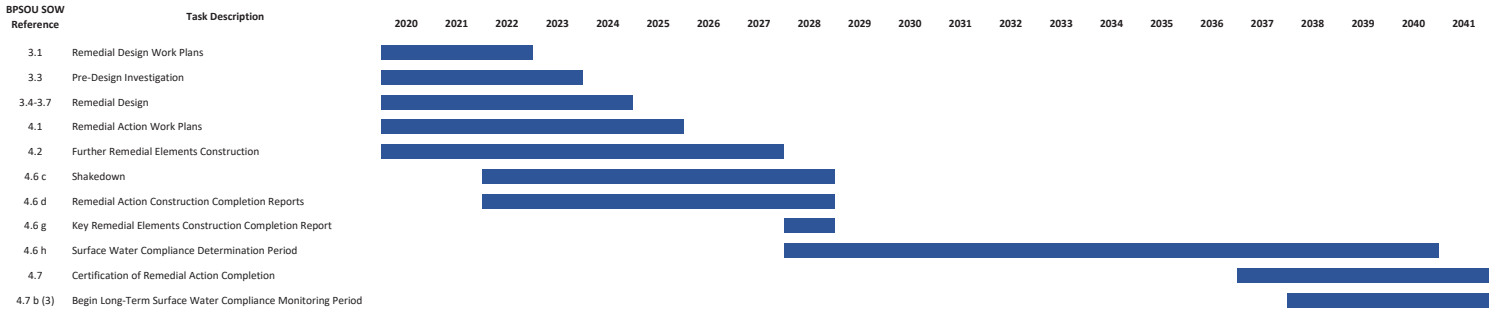
9.3 Other Regulations and Guidance

For any regulation or guidance referenced in the CD or BPSOU SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after SDs receive notification from EPA of the modification, amendment, or replacement.

EXHIBIT 1 TO THE REMEDIAL DESIGN/REMEDIAL ACTION STATEMENT OF WORK (SOW)

Remedial Design (RD)/Remedial Action (RA) Schedule for the Further Remedial Elements

- Notes:**
- 1) All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the RD and RA Schedules set forth below.
 - 2) SDs may submit proposed revised RD Schedules or RA Schedules for EPA approval.
 - 3) Upon EPA approval, the revised RD and/or RA Schedules supersede the RD and RA Schedules set forth below, and any previously-approved RD and/or RA Schedules.
 - 4) The below RD/RA Schedule is reflective of current project understanding and known site and project constraints, including but not limited to:
 - a) A BPSOU Consent Decree will be lodged with the Court in 2020.
 - b) Parties will attempt to minimize simultaneous operations within the project areas, on haul roads, and at the selected repository location.
 - c) No more than (1) project may contribute construction dewatering flow to the Butte Treatment Lagoons at any given time during execution of the work.
 - d) Further Remedial Element construction will be sequenced so that groundwater hydraulic controls are in place and operational prior to commencement of future work that could be impacted by the presence of contaminated groundwater.
 - 5) The below RD/RA Schedule addresses content of Sections 3 through 6 of Appendix D, BPSOU SOW. Items that do not require deliverables in accordance with the SOW, or would be addressed within the general tasks of the below RD/RA Schedule are omitted for clarity.
 - 6) The below RD/RA Schedule is intended to be inclusive of all known activities required to complete the identified Further Remedial Elements SOW, including the tasks associated with preliminary design, intermediate design, pre-final design and final design (30%, 60%, 95%, 100%), procurement, construction, shakedown, inspection, certification, monitoring, and reporting activities. A more specific Gantt chart schedule shall be developed during remedial design.



**BPSOU SURFACE WATER COMPLIANCE
DETERMINATION PLAN**

**BUTTE PRIORITY SOILS OPERABLE UNIT
of the
SILVER BOW CREEK / BUTTE AREA SUPERFUND
SITE**

Butte-Silver Bow County, Montana

**ATTACHMENT A TO APPENDIX D
TO THE CONSENT DECREE**

Consent Decree for the Butte Priority Soils Operable Unit
 Partial Remedial Design/Remedial Action and Operation and Maintenance

TABLE OF CONTENTS

1.0 INTRODUCTION1

1.1 Background.....2

2.0 IN-STREAM MONITORING FOR NORMAL FLOW AND WET WEATHER CONDITIONS.....4

2.1 Definition of Wet Weather Events and Normal Flow Conditions.....4

2.1.1 Wet Weather Events Flow Regime4

2.1.2 Normal Flow Regime Definition.....5

2.2 Contaminants of Concern for Compliance Monitoring6

2.3 Sampling Parameters7

2.3.1 In-Stream Surface Water Quality Performance Standards.....7

2.3.2 Downstream Compliance Stations – SS-06G and SS-079

2.3.3 Upstream Compliance Assessment Station – SS-0110

2.4 Type of Monitoring/Sampling10

2.4.1 Wet-Weather Sampling Protocol and Sampling Frequency10

2.4.2 Normal Flow Sampling Protocol.....10

3.0 PROCEDURES FOR COMPARISON TO IN-STREAM SURFACE WATER PERFORMANCE STANDARDS11

3.1 Sample Averaging11

3.2 Comparison to Performance Standards12

3.3 Comparison to Upstream12

3.4 Allowable Exceedance Rates.....12

4.0 COMPLIANCE STANDARD DETERMINATION AND USE OF REPLACEMENT STANDARDS.....13

5.0 CORRECTION OF REMEDIAL ELEMENTS RELATED TO IN-STREAM SURFACE WATER14

6.0 COMPLIANCE DETERMINATION AND PENALTY APPLICATION FOR IN-STREAM PERFORMANCE STANDARDS15

7.0 ADDITIONAL WORK UNDER PARAGRAPH 27 OF THE CD TO ADDRESS IN-STREAM SURFACE WATER PERFORMANCE STANDARD EXCEEDANCES15

7.1 Diagnostic Response and Additional Work to Address Chronic (Normal Flow) Standard Exceedances16

7.2 Diagnostic Response and Additional Work to Address Acute (Wet Weather) Standard Exceedances18

7.3 Further Waivers21

8.0 BUTTE TREATMENT LAGOONS.....21

8.1 Remaining Remedial Elements Activities21

8.2 Upset Conditions21

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

8.3 Butte Treatment Lagoon Performance Standards.....22
8.4 Interim Monitoring Period and Interim Standards Period for Butte Treatment
Lagoon (BTL) Systems to be Applied During Any Shakedown Period24
9.0 SWCDP MODIFICATIONS25

LIST OF TABLES, FIGURES, AND EXHIBITS

Table 2-1 In-Stream Surface Water Performance Standards
Table 8-1 Butte Treatment Lagoon Discharge Performance Standards

Figure 1-1 In-stream Surface Water Compliance Timeline
Figure 3-1 Summary of Instream Compliance Determination Process
Figure 7-1 Flowchart for Addressing Surface Water Compliance Exceedances (Acute / Wet
Weather flow and Chronic/Normal Flow)
Figure 7-2 Corridor Area
Figure 7-3 Surface Water In-stream ARAR Waiver Process

Exhibit 1 BPSOU Surface Water Management Plan

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

1.0 INTRODUCTION

This BPSOU Surface Water Compliance Determination Plan (SWCDP or this Plan) identifies the methodology for assessing compliance with the surface water Performance Standards at the Butte Priority Soils Operable Unit (BPSOU) of the Silver Bow Creek/Butte Area Superfund Site. This compliance plan, including its methodology, is site-specific, applying to this operable unit only, and shall not serve as precedent for any actions outside of this operable unit. A companion document, the BPSOU Surface Water Management Plan (BPSOU SWMP or SWMP), describes, among other things, the procedures for obtaining the data to be used in this SWCDP and is attached as Exhibit 1 to this SWCDP.

Surface water monitoring under the BPSOU SWMP shall commence upon U.S. Environmental Protection Agency (EPA) approval, in consultation with Montana Department of Environmental Quality (DEQ), of the BPSOU SWMP.

For in-stream numeric surface water applicable or relevant and appropriate requirements (ARARs), also referred to as in-stream surface water Performance Standards, the surface water compliance determination process described in this plan shall commence following:

- a. Approval of the Key Remedial Elements Construction Completion Report (KRECCR) for these key remaining remedial elements including wet weather Best Management Practices (BMPs); additional source control including capping and cap upgrades; and bed, bank and adjacent floodplain contaminated materials removal actions, as further defined and described in Attachment C to the BPSOU Statement of Work (SOW). The KRECCR shall also address floodplain stabilization and vegetation establishment and cap vegetation establishment for new or upgraded caps; and
- b. A subsequent compliance standard determination monitoring period that begins upon approval of the KRECCR which shall include an operational and functional (O&F) demonstration, and lasts for nine (9) years, or a longer period of time that is needed to observe and sample a wet weather event as defined in Section 2.1.1, not to exceed a total of twelve years. In order to maintain consistency with compliance standard determination timing, the compliance standard determination monitoring period will apply for both normal flow and wet weather in-stream surface water Performance Standards. EPA in consultation with DEQ may approve revision of the SWMP if needed to more accurately monitor in-stream surface water quality based on the results during this period or recommendations contained in five-year reviews.

At the completion of the compliance standard determination monitoring period, a compliance standard determination of the in-stream surface water Performance Standards

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

shall be made by EPA, in consultation with DEQ, as described in Section 4.0 of the SWCDP.

That determination shall be made and applied individually for each individual contaminant of concern (COC) and individually for each flow regime. The Performance Standards identified in that determination shall be applicable during subsequent compliance monitoring. Long term in-stream surface water monitoring shall also be conducted along with compliance monitoring.

The attached in-stream surface water compliance timeline (Figure 1-1) describes the sequencing and milestones for the compliance determination process.

For numeric ARAR standards applied to the Butte Treatment Lagoon (BTL) outflow, compliance with end-of-pipe performance standards described in Section 8.0, Table 8-1 shall be required at the end of the shakedown period for the BTL. The shakedown period is currently in place and shall continue until approval of the KRECCR. A new shakedown period shall be approved by EPA, in consultation with DEQ, if significant expansion or modification (i.e., greater than 25 percent capacity) of the BTL is required after the approval of the KRECCR. During the shakedown periods, the Settling Defendants shall use best efforts to achieve the end-of-pipe Performance Standards described in Section 8.0, Table 8-1 for the BTL.

From the Effective Date until the end of any shakedown period, interim standards protocols described in Section 8.4, subsections A. and B. shall apply to the BTL discharge.

1.1 Background

The 2006 BPSOU Record of Decision, issued by EPA with partial concurrence by the DEQ, identified surface water ARAR Performance Standards for surface water within the operable unit. The 2006 Record of Decision adopted State of Montana (State) surface water quality standards set forth in Circular DEQ-7 (February 2006) for the COCs identified in the 2006 Record of Decision.¹ The 2006 Record of

¹ The ROD identified these standards for certain surface water areas within the BPSOU, including Silver Bow Creek from its confluence with Blacktail Creek downstream. Subsequently, a State of Montana court decision known as *Silver Bow Creek Headwaters Coalition v. State of Montana, DV-10-431* (August 17, 2015) declared that the surface area between Texas Avenue in Butte and the confluence of Blacktail and Silver Bow Creek was named “Silver Bow Creek.” In prior Superfund removal and remedial documents and publications, including the 2006 Butte Priority Soils Operable Unit Record of Decision (2006 BPSOU ROD) and 2011 BPSOU Explanation of Significant Differences (ESD), EPA has called this surface area the “Metro Storm Drain.” Due to MDEQ’s involvement

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

Decision surface water standards, measured in total recoverable form (dissolved for aluminum), were identified as ARARs for both point sources affected or created by the BPSOU cleanup and for ambient surface waters. These standards are identified in Appendix A, Section IV.A.1. of the 2006 Record of Decision, which identifies ARARs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act as amended (CERCLA).

Two of these standards – acute in-stream surface water standards for copper and zinc – were subsequently waived by EPA, with the concurrence of DEQ, pursuant to CERCLA and as described in the Amendment to the Record of Decision dated February 4, 2020, and are replaced by federal water quality criteria identified in the 2006 Record of Decision and the 2020 Amendment to the Record of Decision.

If certain aquatic life in-stream surface water Performance Standards in the ROD are exceeded more than three times during the nine-year compliance standard determination monitoring period as more specifically described in Sections 1.0, 3.0, 4.0 and Figure 7-3, that standard shall be waived and replaced with the applicable Replacement Standard identified in the fifth column of Table 2-1 at the time of the Compliance Standard Determination described in Section 4.0. No further ROD amendments or other decision documents are required for the Replacement Standards to become effective.

This document sets forth the compliance assessment methodology for in-stream surface water Performance Standards for the BPSOU and the compliance assessment methodology for end-of-pipe discharge standards from the BTL. Since ambient water quality criteria (AWQC) identified as in-stream surface water Performance Standards or proposed as Replacement Standards are meant only to protect aquatic life in the water column, a supporting in-stream sediment monitoring methodology is separately set forth in the BPSOU SWMP. The monitoring of in-stream sediments is meant to assist in Five Year Review determinations regarding the protectiveness of the BPSOU Remedy, focusing on sediment concentration trends, benthic macro invertebrate data and other relevant data. Further discussion of sediment-related data is contained in the SWMP.

in this document's issuance, and where reference to this specific section of Silver Bow Creek is necessary, further geographic descriptions, such as Silver Bow Creek "east" or "above" its confluence with Blacktail Creek is used in order for DEQ to comply with the court's order. Reference to the area as "Silver Bow Creek" or "Silver Bow Creek east of or above its confluence with Blacktail Creek" should not be construed as an admission or determination by any Consent Decree party on any procedural or substantive issue. The United States retains and reserves all its rights and authorities.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

Specific in-stream sediment standards are not included as Performance Standards in the ROD or its amendments.

2.0 IN-STREAM MONITORING FOR NORMAL FLOW AND WET WEATHER CONDITIONS

The 2006 Record of Decision specified that the overall surface water remedial goal is to obtain and maintain the in-stream concentrations of COCs below the numeric surface water performance standards for all flow conditions throughout Grove Gulch Creek, Blacktail Creek and Silver Bow Creek, and to return Silver Bow Creek downstream of its confluence with Blacktail Creek to its beneficial uses for all flow conditions, within and downstream of BPSOU.

The surface water in the watershed contains storm water runoff from a combination of historic mine waste and other nonpoint sources, including urban runoff, residential runoff, agricultural runoff, and runoff from other commercial\industrial sources that are not related to the CERCLA remediation. Therefore, while numeric standards are used as surface water Performance Standards, the presence of other third-party sources is considered when determining Settling Defendants' compliance with in-stream surface water Performance Standards. Given the past and future efforts to identify and remediate sources of historic mining waste, the impact of those sources is expected to decline over time. This document specifies procedures for evaluating compliance under these conditions, as described below.

2.1 Definition of Wet Weather Events and Normal Flow Conditions

2.1.1 Wet Weather Events Flow Regime

The 2006 Record of Decision defined wet weather flow conditions as flow greater than 50 cubic feet per second (cfs) at monitoring station SS-07 in Silver Bow Creek or greater than 35 cfs at station SS-04 in Blacktail Creek. Subsequent monitoring has found times when these specified flow rates occurred during dry weather flow conditions; thus, the definition needed to be revised. In general, wet weather flow conditions are highly variable and typically occur during rainfall and snowmelt events from spring through early fall, although snowmelt can occur at any time.

For the purposes of compliance monitoring, the terms wet weather flow conditions and wet weather events are defined as when there is measurable outflow, as set forth in the BPSOU SWMP, from the primary outlet of the following main stormwater detention/retention basins within the BPSOU: CB-9 in Missoula Gulch, the Diggings East basin, and the Buffalo Gulch basin. The primary outlet for the basins listed above is the discharge structure that is designed to convey water when the basin storage volume exceeds its maximum storage capacity as defined in Attachment C to the BPSOU SOW.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

Sampling for wet weather compliance would be triggered by the above criteria. For compliance standard determination monitoring and for compliance purposes, arsenic and metals concentrations in samples collected during wet weather flow conditions are compared to acute aquatic ARAR Performance Standards. Column 4 of Table 2-1 lists the acute water quality standards applicable during the compliance standard determination period. After the compliance standard determination is made by EPA, in consultation with DEQ, as described in Section 4.0, the acute water quality standards resulting from that determination will be applicable.

The frequency of wet weather events is dependent on the number and type of storm or snowmelt events, the size of the stormwater basins described above, and the manner in which such basins are constructed and operated. Wet weather flow that has been sampled historically ranged from 4 to 10 events per year under a different flow definition. To account for anomalous weather patterns, the number of wet weather events sampled for compliance standard determination and compliance monitoring purposes is limited to three per month (Section 2.4.1). This document and the BPSOU SWMP require sampling of in-stream surface water to evaluate wet weather events for performance monitoring and compliance purposes (see Section 2.4.1 for further discussion).

Performance or diagnostic samples from storm water outfalls, within basins or at basin outfalls, or in-stream, will be collected pursuant to the BPSOU SWMP and its Standard Operating Procedures (SOPs), but will not be treated as compliance monitoring samples.

Given the past and future efforts to identify and remediate sources of historic mining waste, storm water impacts associated with historic mine waste sources are expected to decrease over time. Therefore, the frequency of storm water sampling for each contaminant of concern may be reduced after 10 years of consistent compliance for that contaminant, as determined through monitoring. The Settling Defendants may submit such a request to EPA and DEQ, which will be considered promptly by EPA in consultation with DEQ. In stream surface water samples collected during a measurable precipitation or snowmelt event shall not be used to evaluate chronic standard compliance or overall protectiveness, even if outflow from the main stormwater retention/detention basins does not occur.

2.1.2 Normal Flow Regime Definition

The term “normal flow” regime is defined as flows outside of the defined wet weather flow regime as defined in Section 2.1.1, and flows outside of

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

a 96-hour time period following a hydrologic change caused by a precipitation or snowmelt event or when one or more of the basins discharges, to allow for streams to return to normal flow conditions. For compliance standard determination monitoring and for compliance purposes, arsenic and metals concentrations in samples collected at normal flow are compared to the more restrictive of chronic aquatic ARAR Performance Standards or human health ARAR Performance Standards (see column 3 of Table 2-1). After the compliance standard determination is made by EPA, in consultation with DEQ, as described in Section 4.0, the normal flow water quality standards resulting from that determination will be applicable for compliance monitoring.

Normal flow samples shall not be collected for at least 96 hours following a hydrologic change caused by a precipitation or snowmelt event or when one or more of the basins discharges, to allow for streams to return to normal flow conditions. Discharge from the basins may be temporarily suspended for the purpose of collecting normal flow samples. Normal flow samples shall also not be collected when upstream precipitation events, such as storms which occur upstream of the BPSOU boundaries, cause elevated flows within Blacktail Creek and Silver Bow Creek below its confluence with Blacktail Creek though no storm event may have occurred within the BPSOU. A hydrologic change refers generally to short-term conditions when discharge in Blacktail or Silver Bow Creeks increases by 40 % over 12 hours or a lesser period of time (which is not a summer event caused by submerged macrophytes), for a period of 96 hours following the 40% increase.

Further detail regarding sampling triggers and methods is included in the BPSOU SWMP. Normal flow samples for compliance standard determination monitoring and for compliance purposes shall be collected in 8 compliance sampling events per year including 4 during base flow conditions and 4 during normal high flow conditions. The frequency of normal flow sampling for each contaminant of concern may be reduced after 10 years of consistent compliance for that contaminant, as determined through monitoring. The Settling Defendants may submit such a request to EPA and DEQ, which will be considered promptly by EPA in consultation with DEQ.

2.2 Contaminants of Concern for Compliance Monitoring

The BPSOU ROD identified nine COCs for surface water within the BPSOU. This SWCDP incorporates the BPSOU ROD list, which includes:

- Aluminum (Al)
- Arsenic (As)

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- Cadmium (Cd)
- Copper (Cu)
- Iron (Fe)
- Lead (Pb)
- Mercury (Hg)
- Silver (Ag)
- Zinc (Zn)

2.3 Sampling Parameters

In accordance with the BPSOU SWMP, all in-stream surface water samples shall be analyzed for all COCs, both total recoverable and dissolved, plus hardness and applicable parameters that are needed to apply the Biotic Ligand Model (BLM) to storm water samples. Additional sampling parameters are set forth in BPSOU SWMP, including field measurements (e.g., pH, temperature, specific conductance, oxidation-reduction potential) and hydrologic measurements (e.g., stage, discharge). Sampling protocol as set forth in the BPSOU SWMP and in the Clark Fork River Superfund Site Investigations Quality Assurance Project Plan and any amendments thereto shall be utilized. Modifications to the sampling requirements may be completed through an EPA-approved (in consultation with DEQ) Request for Change, or through direction by EPA, in consultation with DEQ, and upon agreement by the Settling Defendants.

2.3.1 In-Stream Surface Water Quality Performance Standards

In accordance with the BPSOU ROD, as modified, the in-stream surface water ARAR Performance Standard compliance requirements are set forth below.

For compliance purposes, COC concentrations in samples collected during wet weather events are compared to acute aquatic standards, and COC concentrations in samples collected during normal flow conditions are compared to the more restrictive of chronic aquatic standards or human health standards, all as identified in Table 2-1.

Table 2-1 summarizes the applicable in-stream surface water ARAR Performance Standards for each flow regime. Chronic aquatic life standards are based on 4-day average concentrations. Acute aquatic life standards are based on 1-hour average concentrations. Human health standards are discrete and do not have an averaging period.

Surface water ARAR Performance Standards shown below were determined in the 2006 BPSOU Record of Decision (see page 8-7), except as noted.

Consent Decree for the Butte Priority Soils Operable Unit
 Partial Remedial Design/Remedial Action and Operation and Maintenance

Table 2-1: In-Stream Surface Water Performance Standards

| COLUMN 1 | COLUMN 2 | COLUMN 3 | COLUMN 4 | COLUMN 5 |
|----------------------|---|---|---|--|
| CONTAMINANT | FRACTION | NORMAL FLOW COMPLIANCE STANDARD (The more stringent of the Chronic Aquatic or Human Health standard) ^c | WET WEATHER EVENT COMPLIANCE STANDARD (Acute Aquatic standard) ^c | REPLACEMENT STANDARD, IF NECESSARY BASED ON THE COMPLIANCE STANDARD DETERMINATION PROCESS DESCRIBED BELOW ^{c,d} |
| Aluminum | Dissolved for Chronic and Acute ^a | 87 µg/L | 750 µg/L | None – currently in compliance. |
| Arsenic | Total Recoverable for Chronic and Acute | 10 µg/L | 340 µg/L | None – elevated normal flow arsenic due to sources upstream of BPSOU. In compliance with acute standard. |
| Cadmium ^f | Total Recoverable for Chronic and Acute | 0.26 µg/L | 0.49 µg/L | Acute - 0.49 µg/L, measured as dissolved ^b Chronic – none, currently in compliance |
| Copper | Total Recoverable for Chronic; Dissolved for Acute ^b | 2.85 µg/L | 3.6 µg/L | Acute – Biotic Ligand Model ^e Chronic – Biotic Ligand Model ^e |
| Iron | Total Recoverable for Chronic | 1,000 µg/L | NA | Acute – NA None – elevated iron due to sources upstream of BPSOU. |
| Lead | Total Recoverable for Chronic and Acute | 0.545 µg/L | 13.98 µg/L | Acute - 14 µg/L measured as dissolved Chronic - 0.54 µg/L, measured as dissolved. |
| Mercury | Total Recoverable for Chronic and Acute | 0.05 µg/L | 1.7 µg/L | None - acute standard currently in compliance. Occasional exceedances of human health standard are addressed in stipulated penalty and Additional Work provisions. |

Consent Decree for the Butte Priority Soils Operable Unit
 Partial Remedial Design/Remedial Action and Operation and Maintenance

| | | | | |
|--------|---|---------|------------|--|
| Silver | Total Recoverable for Acute | NA | 0.374 µg/L | Acute - 0.30 µg/L, measured as dissolved. |
| Zinc | Total Recoverable for Chronic; Dissolved for Acute ^b | 37 µg/L | 37 µg/L | Acute – applicable Federal standard at time of Compliance Standard Determination Chronic – none, currently in compliance. |

Notes:

- a. The DEQ-7 standards for aluminum refer to the dissolved fraction and do not represent a waiver of a ROD standard.
- b. The DEQ-7 standards for acute copper and zinc are waived and replaced with federal water quality criteria based on Section 121(d)(4)(C) of CERCLA, 42 U.S.C. § 9621(d)(4)(C), referred to as the technically impracticable waiver.
- c. Standards for cadmium, copper, lead, silver and zinc are hardness dependent. Values shown are calculated at a hardness of 25 mg/L unless otherwise shown.
- d. Numeric replacement standards identified in this column are based on published federal water quality criteria, issued pursuant to Section 403(a) of the federal Clean Water Act, 33 U.S.C. § 1314(a). See <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table>. All contaminants will be eligible for replacement to other federally accepted standards for determining compliance if necessary – see Attachment D to the BPSOU SOW.
- e. The Biotic Ligand Model (BLM) standard in place at the time of compliance standard determination shall be the Replacement Standard for copper for both chronic and acute conditions. For acute conditions (wet weather events), the BLM standard or any other appropriate EPA-approved methodology that will perform in non-equilibrium conditions such as stormwater or diel pH cycling shall be used. The criteria for defining frequency for collection of individual parameters will be defined in the SWMP.
- f. Cadmium standards are updated to the April 2017 Circular DEQ-7 values. Compliance Monitoring Stations

2.3.2 Downstream Compliance Stations – SS-06G and SS-07

The downstream compliance monitoring stations for the BPSOU are SS-06G and SS-07.

The stations are located in Silver Bow Creek. SS-06G is near the end of the BTL but just upstream of the Metro Sewer effluent discharge. SS-07 is near the downstream end of the BPSOU. These stations have a long record of monitoring with automated equipment during wet weather events and also as normal flow stations.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

2.3.3 Upstream Compliance Assessment Station – SS-01

The upstream compliance assessment monitoring station for the BPSOU is SS-01. The upstream compliance assessment station provides data for COC concentrations upstream of BPSOU. Data will be collected at the SS-01 compliance assessment monitoring station for each COC and the other required sampling parameters, as described in the BPSOU SWMP, for use in the upstream comparison protocol (see Section 3.3). The Settling Defendants (Atlantic Richfield with the concurrence of Butte Silver Bow County) may propose re-location and/or one or more new upstream compliance assessment monitoring station(s) to recognize significant changes to stream flow or water quality entering BPSOU. The new upstream location(s) may replace or be proposed in addition to the existing upstream assessment station (SS-01). Any such change or changes is/are subject to EPA and DEQ approval. Should EPA and DEQ not reach agreement on whether to approve a change in the upstream assessment station, the dispute will be resolved pursuant to the SMOA. If that process results in a denial of the SDs request, that decision is subject to Dispute Resolution pursuant to Section XV of the Consent Decree.

2.4 Type of Monitoring/Sampling

2.4.1 Wet-Weather Sampling Protocol and Sampling Frequency

To the extent practicable, during wet weather flow conditions samples shall be collected using automated equipment, within the wet weather flow regime defined in Section 2.1.1, and the number of wet weather events that would be sampled shall be limited to three per month.

A 1-hour measure or, in the alternative, an averaging period of 1 hour shall be used for measuring compliance during wet weather events. To the extent practicable, a 1-hour measurement shall be collected using the compositing features of the automated sampling equipment. If not practicable (such as during a snow melt event), manual sampling may be utilized, if such sampling can be completed in accord with applicable federal and State health and safety regulations and the SWMP.

Wet weather sample collection shall be initiated based on a trigger when the condition described in Section 2.1.1 occurs. Sampling stations for performance monitoring will be further described in the BPSOU SWMP.

2.4.2 Normal Flow Sampling Protocol

In accordance with the ROD, normal flow monitoring shall consist of manually collecting stage, flow, and water quality data for a total of 8 compliance sampling events per year including 4 during base flow conditions and 4 during normal high flow conditions, collected consistent with the BPSOU SWMP. Sampling shall be integrated across the cross-

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

section of the stream at each compliance station. COCs from this sampling method shall be directly compared to the normal flow in-stream surface water ARAR Performance Standards described above and in accordance with Section 3.2 below. In order to be consistent with historical data, compliance sampling shall be conducted in the morning hours beginning with station SS-07.

As noted previously, normal flow compliance samples shall not be collected for at least 96 hours following a precipitation or snowmelt event or when one or more of the basins discharges to allow for streams to return to normal flow conditions. Discharge from the basins may be temporarily suspended for the purpose of collecting normal flow samples. Normal flow samples shall also not be collected when upstream precipitation events, such as storms which occur upstream of the BPSOU boundaries, cause elevated flows within Blacktail Creek and Silver Bow Creek below its confluence with Blacktail Creek though no storm event may have occurred within the BPSOU.

Additional performance samples for normal flow may include United States Geological Survey (USGS) sampling data and additional samples collected under the SOP within the BPSOU SWMP but are not required by this SWCDP.

3.0 PROCEDURES FOR COMPARISON TO IN-STREAM SURFACE WATER PERFORMANCE STANDARDS

The following procedures apply during the compliance standard determination monitoring period and during compliance monitoring. See Figure 3-1 for a summary of this process.

3.1 Sample Averaging

Aquatic standards used as Performance Standards are based on time of exposure and allow averaging of samples to obtain the appropriate concentrations for comparison to the standards.

Acute aquatic standards are based on a 1-hour exposure, and an average concentration during a 1-hour period is appropriate. Section 2.4.1 specifies that a 1-hour composite sample should be collected to meet this data need. If a composite sample is unavailable, two discrete samples collected within 1 hour can be averaged to obtain a 1-hour average result. Composite samples should not be averaged to obtain a 1-hour average concentration unless the total time span of the composite samples is 1 hour or less.

Chronic aquatic standards are based on a 4-day exposure period, and samples used for comparison to this standard are generally a single discrete sample. Samples

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

collected within a contiguous 4-day period may be averaged to obtain an average concentration.

Human health standards are discrete and do not have an averaging period.

3.2 Comparison to Performance Standards

Certain performance standards vary based on hardness and instantaneous water quality criteria for BLM in the stream, and this calculation shall be made to determine the surface water Performance Standards identified in Table 2-1. If compliance samples at the point of compliance are to be averaged, this averaging must also be conducted before the averaged samples are compared with Performance Standards.

Comparison of compliance sample COC concentrations are subject to variability due to many factors, including variations in sampling and analytical processes in the specific aliquot of water to be sampled and variability in timing of the sampling attempting to compare the same or similar aliquots of water between two different sampling points in the stream. To allow for sampling and analysis uncertainty, the contaminant concentrations in the compliance samples shall be reduced by 10 percent of the reported concentration.

If the adjusted COC concentration in the downstream sample is less than or equal to the performance standard, the sample is in compliance. If the COC concentration in the downstream sample exceeds the performance standard, comparison to upstream is conducted.

SDs shall prepare and submit by June 30th of each year, a draft Surface Water Compliance Comparison and Interpretation Report. The description and content of the report is included in Section 7.3 of the SWMP and shall be prepared annually by the SDs.

3.3 Comparison to Upstream

To account for COC contributions entering the BPSOU from upstream, the upstream comparison methodology shall be applied when appropriate. If the upstream concentration is greater than the adjusted downstream compliance concentration for that COC, there is no exceedance. An exceedance occurs when the adjusted compliance concentration at a point of compliance (SS-07 or SS-06G) exceeds the Performance Standard and the COC upstream concentration.

3.4 Allowable Exceedance Rates

As stated in AWQC documentation, one exceedance of the aquatic life standards is allowable per 3 years. No exceedances are allowable for human health standards.

Exceedances are counted on an event basis. If one or more downstream samples collected during a single storm event is determined to exceed one standard following the methods in Section 3.2, then one exceedance of that standard has

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

occurred for that storm event. Multiple exceedances occurring in one storm event are not additive, and only a single event exceedance is enumerated. Similarly, exceedances are counted per standard. If more than one standard is exceeded in a storm event, the exceedances are not additive, and exceedances would be enumerated as one per standard for that storm event.

During the compliance standard determination monitoring period only, any exceedance that results from a failure of a surface water related remedial element, including the failure of Settling Defendants to operate or maintain a surface water related remedial element, is not counted as an exceedance for purposes of the compliance standard determination monitoring, as described in Section 4.0 below. Paragraphs 6 and 7 of Section 4.0 describe the manner in which the Settling Defendants will address the potential exclusion of exceedances described in this paragraph.

4.0 COMPLIANCE STANDARD DETERMINATION AND USE OF REPLACEMENT STANDARDS

The SWCDP and the steps described below indicate how the compliance standard determination monitoring period and the compliance standard determination decision by EPA, in consultation with DEQ, at the conclusion of that monitoring period, will be implemented. Compliance assessments and determinations after the compliance standard determination decision is issued are separate steps and issues, addressed in Sections 5.0 through 7.0.

The compliance standard determination monitoring period shall begin upon approval of the KRECCR, as defined in Section 1.0 of the SWCDP.

The compliance standard determination monitoring period shall last for nine (9) years or a longer period of time if needed to observe and sample a wet weather event as defined in Section 2.1.1, not to exceed twelve years.

Within 120 days after the receipt of validated data collected during the full compliance standard determination monitoring period, EPA, in consultation with DEQ, shall make a compliance standard determination for in-stream surface water standards, based on the sampling data and the protocols described in this SWCDP and the BPSOU SWMP.

Data collected at downstream compliance measurement stations will be compared to Performance Standards and upstream concentrations to determine compliance with Performance Standards for in-stream COCs, as described in Section 3.0 above.

During the compliance standard determination period only, if more than three exceedances of a contaminant ARAR is detected in a 9 year period (or a longer period of time if needed to observe and sample a wet weather event as defined in Section 2.1.1, not to exceed twelve years), then the Replacement Standard for that contaminant of concern (identified in Table

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

2-1, fifth column) shall become the applicable in-stream surface water ARAR Performance Standard, unless any one of the three exceedances resulted from a failure of a surface water related remedial element, including the failure of Settling Defendants to operate or maintain a surface water related remedial element as required by the applicable operation and maintenance plans (including operation and maintenance plans related to groundwater controls), other than such failures which are related to the exceedance in a de minimis manner.²

Upon request by EPA or DEQ, or upon the Settling Defendants' notice to EPA and DEQ, within 45 days of such request or notice, the Settling Defendants shall investigate and report on whether a failure to operate or maintain a surface water related remedial element occurred for a given exceedance. Further discussion of this investigation and report is found in the SWMP. Such reports are subject to the approval of EPA, in consultation with DEQ. Within 120 days following submission of the Settling Defendants' report, EPA, in consultation with DEQ, shall provide Settling Defendants with a written notice that identifies each surface water related remedial element that Settling Defendants' failed to operate or maintain during any event for which EPA claims an exceedance resulted from such failure, if any. This notice and the findings therein shall be subject to review under the Dispute Resolution provisions of the Consent Decree. Replacement Standards are evaluated and applied on a per COC and per flow condition basis. The standards determined in this manner will apply during subsequent compliance monitoring.

5.0 CORRECTION OF REMEDIAL ELEMENTS RELATED TO IN-STREAM SURFACE WATER

If at any time after the Effective Date of the Consent Decree there is a failure to perform a remedial element related to surface water or to operate and maintain a surface water-related remedial element in accordance with the approved operation and maintenance plans, the Settling Defendants shall promptly correct any such conditions, and report in writing on their efforts to EPA and DEQ. Such reports are subject to the approval of EPA, in consultation with DEQ.

² For purposes of the SWCDP, "de minimis" shall mean quantities of contaminants of concern measured in a specific release or failure event which are negligible in comparison to the eventual impact of such a release on in-stream performance standard exceedances. A determination of "negligible" is event and site specific. Any rejection of a "de minimis" finding by EPA in consultation with DEQ is subject to the Dispute Resolution provisions of the Consent Decree.

6.0 COMPLIANCE DETERMINATION AND PENALTY APPLICATION FOR IN-STREAM PERFORMANCE STANDARDS

No claim for stipulated or statutory penalties against the Settling Defendants for alleged noncompliance with any in-stream surface water Performance Standards including Replacement Standards shall arise under this Consent Decree. Stipulated and statutory penalties are applicable to the implementation of response actions, in accordance with Section XVI of the Consent Decree.

7.0 ADDITIONAL WORK UNDER PARAGRAPH 27 OF THE CD TO ADDRESS IN-STREAM SURFACE WATER PERFORMANCE STANDARD EXCEEDANCES

If an exceedance of in-stream chronic (normal flow) surface water Performance Standard is found during the compliance standard determination monitoring period or if an exceedance of a chronic standard is found during compliance monitoring, the process for the determination of further remedial action (hereinafter “Additional Work”) pursuant to Paragraph 27 of the CD is described in Section 7.1 and shown in Figure 7-1. If an exceedance of an in-stream acute (wet weather flow) in-stream surface water Performance Standard occurs during such monitoring, the process for determination of Additional Work pursuant to paragraph 27 of the CD is described in Section 7.2 and shown in Figure 7-1.

For the purposes of Additional Work requirements pursuant to Paragraph 27 of the CD, this Section and Figure 7-1, “Diagnostic Response Investigation” is limited to actions to investigate and address Historic Mine Waste Source(s), remedy elements, or operation and maintenance failures, through investigations and response actions, if required, within the “Scope of the Remedy selected in the ROD” (hereinafter referred to as the “Scope of the Remedy”) as described below and in Section 1.3 of the BPSOU SOW.

For purposes of Section 7 of the SWCDP only (and its application to Paragraph 27 of the Consent Decree), Historic Mine Waste Source shall mean a source, or a combination of sources, such as former mine yards; pre-1980 waste rock piles; pre-1980 mining, milling or smelting wastes (excluding historic smelter emissions); pre-1980 tailings impoundments; or open pit mines within the BPSOU.

Historic Mine Waste Source does not include:

- a. A source which is substantially from a primary source located outside of the BPSOU surface boundary;
- b. A source which is associated with such things as metal-bearing construction materials (such as copper piping or wire, lead solder or fittings, copper or galvanized roofing material) of homes or businesses or other commercial structures; or

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- c. A source which is controlled by an existing, enforceable and separate regulatory program such as activities governed by the Butte Silver Bow County ordinance governing stormwater control at construction activities.

For the purposes of the SWCDP only, the “Corridor” shall mean all areas within the BPSOU that do not drain to: (a) one of the main stormwater basins located within Missoula Gulch, Buffalo Gulch, Diggings East, or Northside Tailings; or (b) any storm water basins constructed under Attachment C, Sections 4 or 9 (Further Remedial Elements Scope of Work). The Corridor includes streambeds, banks, and adjacent floodplains of Silver Bow Creek below its confluence with Blacktail Creek and Blacktail Creek within the BPSOU and located downgradient of the described stormwater basins and controls; areas immediately adjacent to Silver Bow above its confluence with Blacktail Creek, Silver Bow Creek below its confluence with Blacktail Creek, and Blacktail Creek; uncontrolled surface water runoff areas on the Butte Hill (e.g. Montana Street storm sewer outlet drainage area); and areas within the stormwater basins footprints. No new BMPs are required within the Montana Street stormwater drainage area or outfalls / runoff from I-90 to surface water. These structures collect storm water from urban sources and not from an Historic Mine Waste Source. Notwithstanding the prior sentence, the existing Montana Street HDD shall be maintained by the SDs, and SDs will investigate, propose and implement low impact BMPs to address unpaved areas within the Montana Street stormwater drainage to address unpaved areas that direct stormwater runoff to surface water. See Figure 7-2.

7.1 Diagnostic Response and Additional Work to Address Chronic (Normal Flow) Standard Exceedances

Upon verification of an exceedance of a chronic standard, the process detailed in Figure 7-1 shall be used to determine the response and Additional Work, if any. A key requirement in this process is the performance of a Diagnostic Response Investigation and resulting report. Any Additional Work to address an exceedance of chronic in-stream Performance Standards shall be limited to the “Corridor” and the Settling Defendants shall not be required to search for Historic Mine Waste Sources outside of that defined area. However, this does not preclude the Settling Defendants from performing O&M improvements and remedial actions outside of the Corridor at their discretion.

Such investigations in accordance with Figure 7-1 shall not exceed six months.

Other steps to be performed by the Settling Defendants in addition to those steps described in Figure 7-1 to help identify the cause of exceedances may include some or all of the following elements:

- Additional diagnostic monitoring at in-stream stations for normal flow events, as appropriate;
- Additional normal flow diagnostic monitoring of in-stream sediments and groundwater, as appropriate.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

Once the Diagnostic Response Investigation within the Corridor, as required, is complete, Settling Defendants shall submit a Diagnostic Response Investigation report with all investigation data, and Settling Defendants' findings regarding whether the exceedance(s) is/are attributed to an Historic Mine Waste Source or a combination of Historic Mine Waste Sources, O&M failure or failure of constructed remedy elements. The report shall detail the nature and extent of such source(s) (if located) or failure of constructed remedy elements or O&M failures, and recommended Additional Work within the Scope of the Remedy as described in Section 1.3 of the BPSOU SOW and as shown in Figure 7-1, as appropriate, to mitigate the potential for further exceedances. The report may also address the de minimis nature of the contribution to the exceedance(s) from the Historic Mine Waste Source, the combination of Historic Mine Waste Sources, or failure of constructed remedy elements. Such reports are subject to the approval of EPA, in consultation with DEQ.

EPA, in consultation with DEQ, will consider the Diagnostic Response Investigation report and any other pertinent information, and determine if the exceedance(s) is/are related to a release from an Historic Mine Waste Source or a combination of Historic Mine Waste Sources or failure of constructed remedy elements or O&M failure within the BPSOU. The frequency, magnitude, and whether such exceedances are de minimis shall also be considered when making this determination.

If EPA, in consultation with DEQ, does not agree with the scope of the Diagnostic Response Investigation conducted by Settling Defendants, or the findings set forth by Settling Defendants in the submitted Diagnostic Response Investigation report, EPA, in consultation with DEQ, may conduct further investigations within the Corridor and collect additional empirical data to determine whether the cause of the exceedance is from an Historic Mine Waste Source or a combination of Historic Mine Waste Sources and the contribution from that source is not de minimis.

The Diagnostic Response Investigation will be further described in a SOP within the BPSOU SWMP.

EPA, in consultation with DEQ, may require the following Additional Work actions (as described in Section 1.3 of the BPSOU SOW):

To mitigate exceedances of chronic in-stream Performance Standards, the Scope of the Remedy includes only:

- (i) Optimization of Butte Site groundwater interception, control and treatment structures and systems in place after Remedy construction, such as system enhancements, installation of extraction wells, and/or expanded interception of impacted groundwater, or enhancement of treatment facility operations;

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

- (ii) Capping and/or revegetation of an Historic Mine Waste Source within the Corridor, as defined in Section 7.0 of this SWCDP; and
- (iii) Removal of contaminated in-stream sediments, in accordance with the protocols set forth in the SWMP, determined to be impacted by groundwater in contact with a Historic Mine Waste Source or re-contaminated by a Historic Mine Waste Source, as defined in Section 7.0 of this SWCDP, utilizing the diagnostic evaluation process described in the SWMP.

Except as described in Section 1.3(d)(3)(iii) of the BPSOU SOW, EPA, in consultation with DEQ, may not require additional removal / excavation of any Historic Mine Waste Source(s). However, Settling Defendants may, in Settling Defendants sole discretion, propose additional removal / excavation of any Historic Mine Waste Source(s) or O&M improvements to address non-compliance with a chronic in-stream Performance Standard.

If EPA, in consultation with DEQ, conducts additional investigations and determines an Historic Mine Waste Source or a combination of Historic Mine Waste Sources located within the Corridor is a cause of one or more chronic standard exceedances at a point of compliance during normal flow conditions, Settling Defendants shall have the right to challenge that determination through the Dispute Resolution process provided in the Consent Decree. If EPA's determination is upheld, the Settling Defendants shall be required to remediate the Historic Mine Waste Source(s) in a manner consistent with this Section 7.1 and the Modification of the BPSOU SOW provisions of the Consent Decree found in paragraph 27 of the Consent Decree, and reimburse EPA's investigation costs as provided in the Consent Decree. If EPA's determination is overturned in the Dispute Resolution process, EPA may not require Settling Defendants to remediate the Historic Mine Waste Source, and EPA may not recover its costs of investigation of this source from Settling Defendants.

7.2 Diagnostic Response and Additional Work to Address Acute (Wet Weather) Standard Exceedances

Upon verification of an exceedance of an acute (wet weather) in-stream performance standard, the process detailed in Figure 7-1 shall be used to determine the response and Additional Work, if any. A key requirement in this process is the performance of a Diagnostic Response Investigation and resulting report, which will be based on performance monitoring data collected at or near the time of the exceedance. Additional Work by the Settling Defendants to address an exceedance of acute Performance Standards is limited to optimization of surface water-related remedial elements within the Scope of the Remedy as described below and in Section 1.3 of the BPSOU SOW and as shown in Figure 7-1, as appropriate.

Appropriate optimization, as determined by EPA in consultation with DEQ, will be based on the nature and extent of the exceedance and the ability of optimization to

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

improve in-stream water quality. Additional removal / excavation of any Historic Mine Waste Source(s) or additional storm water controls may not be required as Additional Work to address an exceedance of an acute in-stream Performance Standard.

Upon a finding of an exceedance, the Settling Defendants may take the following steps in addition to those described in Figure 7-1 to help identify the cause of an acute standard exceedance:

- Additional diagnostic monitoring at in-stream stations for wet weather events, as appropriate;
- Additional diagnostic monitoring during wet weather events at the outfalls of major storm water discharge points, as appropriate.

Once the Diagnostic Response Investigation within the Corridor, as required, is complete, Settling Defendants shall submit a Diagnostic Response Investigation report with all investigation data, and Settling Defendants' findings regarding whether the exceedance(s) is attributed to an Historic Mine Waste Source or a combination of Historic Mine Waste Sources, O&M failure or failure of constructed remedy elements. The report shall detail the nature and extent of such source(s) (if located through investigation within the Corridor) or failure of constructed remedy elements or O&M failures, and recommended Additional Work within the Scope of the Remedy as described in Section 1.3 of the BPSOU SOW and as shown in Figure 7-1, as appropriate, to mitigate the potential for further exceedances. The report may also address the de minimis nature of the contribution to the exceedance(s) from the Historic Mine Waste Source, the combination of Historic Mine Waste Sources, or failure of constructed remedy elements. Such reports are subject to the approval of EPA, in consultation with DEQ.

EPA, in consultation with DEQ, will consider the Diagnostic Response Investigation report and any other pertinent information, and determine if the exceedance(s) is/are related to a release from an Historic Mine Waste Source or a combination of Historic Mine Waste Sources or failure of constructed remedy elements or O&M failure within the BPSOU. The frequency, magnitude, and whether such exceedances are de minimis shall also be considered when making this determination.

If EPA, in consultation with DEQ, does not agree with the scope of the Diagnostic Response Investigation conducted by Settling Defendants, or the findings set forth by Settling Defendants in the submitted Diagnostic Response Investigation report, EPA, in consultation with DEQ, may conduct further investigations within the Corridor and collect additional empirical data to determine whether the cause of the exceedance is from an Historic Mine Waste Source or a combination of Historic Mine Waste Sources and the contribution from that source is not de minimis.

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

The diagnostic response investigation will be further described in a SOP within the BPSOU SWMP.

Optimization of surface water-related remedial elements is limited to the following:

To mitigate exceedances of acute in-stream Performance Standards, the Scope of the Remedy includes the Optimization Elements listed in subparagraphs (i) through (iii) only, as described below. Nothing in the BPSOU SOW prevents the Settling Defendants from considering these Optimization Elements in design, and the elements that are supported by the design engineering analysis will be installed in addition to the Work outlined in the Further Remedial Element Scope of Work (Attachment C to the BPSOU SOW), to allow for post-construction optimization of the surface water remedy. The Scope of the Remedy does not include major infrastructure modifications except as defined below after KRECCR approval to construct any Optimization Elements that would require the demolition or reconstruction of previously completed Remedial Elements. The Optimization Elements are:

- (i) Adjustable Diversion and Outlet Structures. Diversion and outlet structures will integrate removable weir plates or stop logs, adjustable screw gates, and/or variable diameter and elevation orifice outlets, as appropriate, to manipulate retained/detained volume and discharge rate at the primary basin discharge point and potentially within each basin's respective forebay.
- (ii) Basin Segregation. The interior of the basins may be segregated to promote confinement of sediment accumulation, to optimize the treatment flow path, and to enhance future land use. Segregation could be completed by general grading, development of micro-pools, construction of berms or structural walls, or installation of turbidity curtains. As appropriate, adjustable outlet structures would be installed similar to those discussed in Optimization Element 1.
- (iii) Logic and Controls. Logic and controls will be considered during the final design process. Control and monitoring devices may accommodate automated system adjustment based upon measured surface water quality at each respective BMP discharge and/or at the Silver Bow Creek compliance monitoring point. A supervisory control and data acquisition (SCADA) system with programmable logic controller(s), proportional-integral-derivative (PID) controllers, and communication systems would be installed and networked as needed to provide necessary operational function.

If EPA, in consultation with DEQ, conducts additional investigations and determines an Historic Mine Waste Source or a combination of Historic Mine Waste Sources located within the Corridor is a cause of one or more acute standard exceedances at a point of compliance during wet weather flow conditions, Settling Defendants shall have the right to challenge that determination through the Dispute Resolution process provided in the Consent Decree. If EPA's determination is

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

upheld, the Settling Defendants shall be required to remediate the Historic Mine Waste Source(s) in a manner consistent with this Section 7.2 and the Modification of the BPSOU SOW provisions of the Consent Decree found in paragraph 27 of the Consent Decree, and reimburse EPA's investigation costs as provided in the Consent Decree. If EPA's determination is overturned in the Dispute Resolution process, EPA may not require Settling Defendants to remediate the Historic Mine Waste Source, and EPA may not recover its costs of investigation of this source from Settling Defendants.

7.3 Further Waivers

Any time after the Compliance Standard Determination provided by EPA in consultation with DEQ, the Settling Defendants may petition EPA and DEQ to issue a further technical impracticability waiver of in-stream surface water ARAR Performance Standards including any Replacement Standards, as set forth in Attachment D to the BPSOU SOW. Any further waiver of an in-stream surface water ARAR Performance Standard granted by EPA and DEQ would include a Replacement Standard which would become the in-stream surface water quality Performance Standard. See Figure 7-3.

8.0 BUTTE TREATMENT LAGOONS

Effluent from the Butte Treatment Lagoons (BTL) must meet federal and state point source discharge standards prior to discharge into Silver Bow Creek. Compliance standards for the BTL discharge are detailed below.

8.1 Remaining Remedial Elements Activities

It should be noted that any changes in conditions due to the remaining surface water Key Remedial Elements with respect to treatment volumes at the BTL would result in the extension of the shakedown period, as described in Section 1.0, Introduction.

8.2 Upset Conditions

If periodic and/or atypical contributions to the BTL or other BMPs could cause upset conditions, Settling Defendants shall notify EPA and DEQ promptly. The definition of upset conditions is:

“Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of Settling Defendants. An upset does not include noncompliance caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

8.3 Butte Treatment Lagoon Performance Standards

The BPSOU ROD identifies certain DEQ-7 standards as the Performance Standards for the BTL discharge. Table 8-1 identifies these standards. Monitoring and

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

reporting requirements for these Performance Standards are described in Section 7.0 of the BTL Groundwater Treatment System Routine Operations, Maintenance, and Monitoring (OM&M) Plan.

Consent Decree for the Butte Priority Soils Operable Unit
 Partial Remedial Design/Remedial Action and Operation and Maintenance

Table 8-1: Butte Treatment Lagoon Discharge Standards After Conclusion of any Shakedown Period

| CONSTITUENT | FRACTION | BTL EFFLUENT STANDARD | NOTES |
|-------------|-------------------|------------------------------------|---|
| Aluminum* | Dissolved | 87 µg/L | Chronic aquatic standard |
| Arsenic | Total Recoverable | 10 µg/L | Human health standard |
| Cadmium | Total Recoverable | 0.097 µg/L @ 25 mg/L hardness | Chronic aquatic standard |
| Copper | Total Recoverable | 2.85 µg/L @ 25 mg/L hardness | Chronic aquatic standard |
| Iron | Total Recoverable | 1,000 µg/L | Chronic aquatic standard |
| Lead | Total Recoverable | 0.545 µg/L @ 25 mg/L hardness | Chronic aquatic standard |
| Mercury | Total Recoverable | 0.05 µg/L | Human health standard |
| Silver | Total Recoverable | 0.374 µg/L @ 25 mg/L hardness | No chronic standard listed for silver; thus, acute standard applies to BTL effluent |
| Zinc | Total Recoverable | 37 µg/l @ 25 mg/L hardness | Chronic aquatic standard |
| pH | NA | Between 6.5 and 9.5 standard units | |

µg/L = microgram per liter; mg/L = milligram per liter

Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

8.4 Interim Monitoring Period and Interim Standards Period for Butte Treatment Lagoon (BTL) Systems to be Applied During Any Shakedown Period

A. Interim Monitoring Period – During Construction of Remedial Elements that Affect the Butte Treatment Lagoons

As described in Section 1.0, an interim monitoring period is necessary during implementation of remedial work that has the potential to affect the BTL operations and prior to the approval of the KRECCR.

The effluent standards described in Table 8-1 will continue to apply during the interim monitoring period in the following manner. The application of the aluminum, arsenic, iron, and mercury standards shown in Table 8-1 will apply without any modification, except that no stipulated or statutory penalties shall apply to exceedances during the interim monitoring period. During the interim monitoring period, the exceedance of discharge standards for cadmium, copper, silver, and zinc standards will not constitute exceedances.

During the interim monitoring period, protocols and BTL corrective actions shall still be followed and documented per the BTL Operations and Maintenance (O&M) plan when discharge concentrations for cadmium, copper, silver, and zinc are above the standards. If appropriate, the SDs shall create an addendum to the O&M Plan for any additional corrective actions for the interim monitoring period to specifically address these parameters.

B. Interim Standards Period for Recalculation of Hardness-dependent Contaminants – After Construction is Complete

Upon the approval of the KRECCR, end-of-pipe BTL discharge standards will be recalculated by EPA, in consultation with DEQ, for hardness-dependent contaminants of concern (cadmium, copper, lead, silver, and zinc) for treated water discharged to Silver Bow Creek that considers the receiving water hardness, and mixing of the BTL effluent with the receiving water. Also, standards shall be the lesser of the chronic and human health standard. Based on the recalculated standards, if necessary, the SDs shall determine an optimization plan and timeframe to achieve these standards. EPA, in consultation with DEQ, shall review and approve the SD's implementation of the optimization plan to achieve compliance.

For the duration of the approved optimization timeframe and until optimization is deemed complete based on the approved plan, the BTL will resume standards at calculations derived with a hardness of 400 mg/L and lead at .015 mg/L. The standards for aluminum, arsenic, iron, and mercury will remain the same as described in Table 2-2. These shall be considered BTL end-of-pipe discharge standards for optimization.

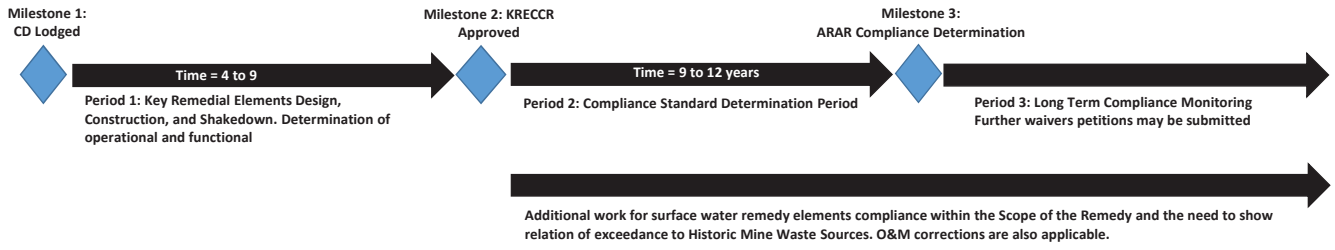
Consent Decree for the Butte Priority Soils Operable Unit
Partial Remedial Design/Remedial Action and Operation and Maintenance

At the end of the optimization timeframe, the BTL must then comply with the final, recalculated standards and be subject to any corrective action requirements and/or penalties. This optimization period does not preclude the BTL from future optimization due to changes in receiving water conditions.

9.0 SWCDP MODIFICATIONS

This SWCDP may be reviewed from time to time during and after the compliance determination monitoring period to evaluate appropriateness and efficacy at measuring compliance with remedial goals. Any revisions to the SWCDP must be adopted in accordance with Paragraph 119 of the Consent Decree. ROD requirements, including compliance monitoring stations and COCs, can only be modified through a ROD amendment or Explanation of Significant Differences.

Figure 1-1. In-Stream Surface Water ARAR Compliance Timeline.



Other Consent Decree provisions, such as the emergency response provisions, new information/unknown conditions reopens and the general reservations of rights apply as stated in the Consent Decree.

From Figure 1-1: Period 2 or 3

Figure 3-1
Summary of In-Stream Compliance Determination Process

BPSOU Surface Water Compliance Determination Plan

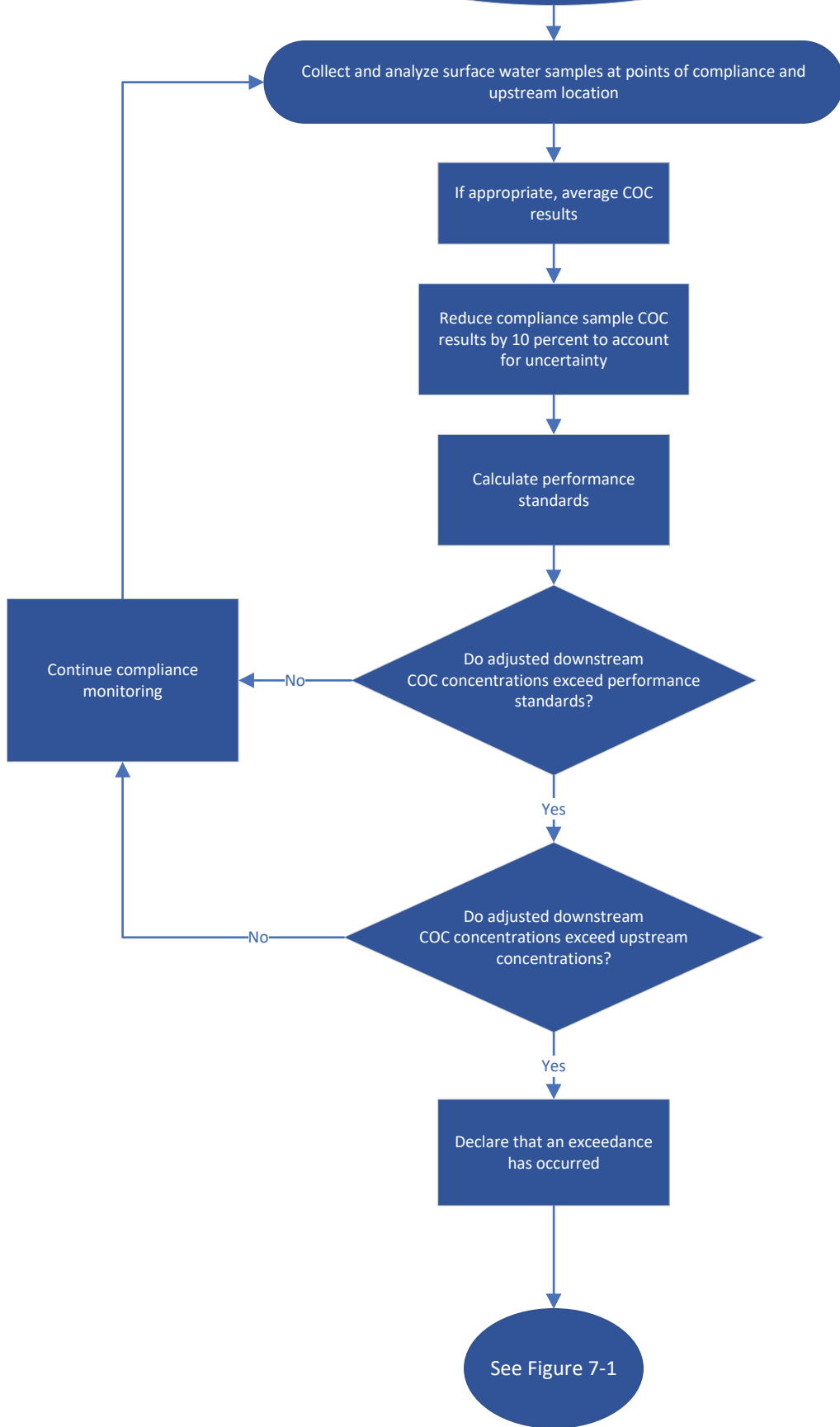
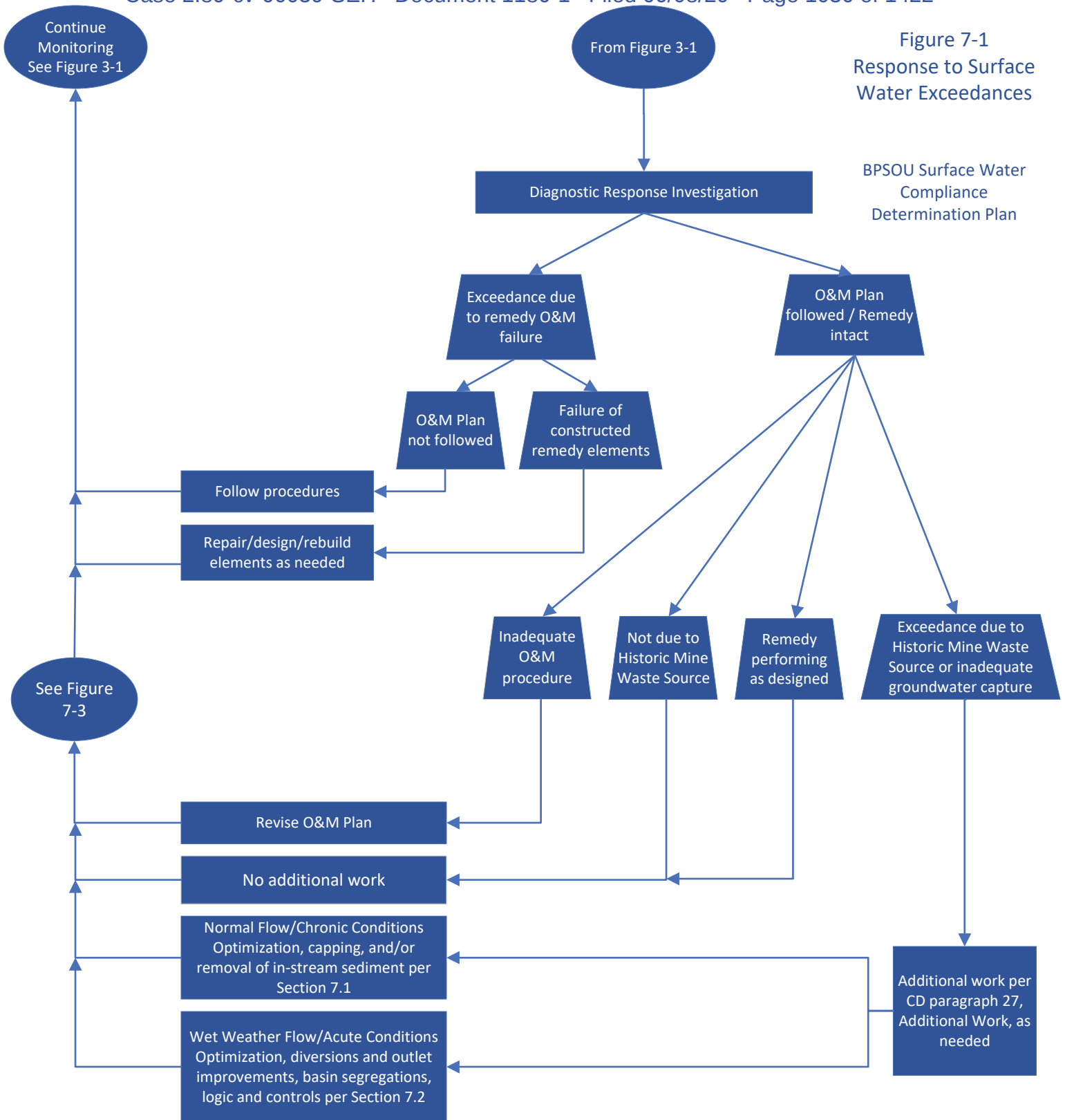


Figure 7-1
Response to Surface
Water Exceedances



HMWS = Historic Mine Waste Source shall mean a source, or a combination of sources, such as former mine yards; pre-1980 waste rock piles; pre-1980 mining, milling or smelting wastes (excluding historic smelter emissions); pre-1980 tailings impoundments; or open pit mines within the BPSOU. Historic Mine Waste Source does not include:

- A. A source which is substantially from a primary source located outside of the BPSOU surface boundary;
- B. A source which is associated with such things as metal-bearing construction materials (such as copper piping or wire, lead solder or fittings, copper or galvanized roofing material) of homes or businesses or other commercial structures; or
- C. A source which is controlled by an existing, enforceable and separate regulatory program such as activities governed by the Butte Silver Bow County ordinance governing stormwater control at construction activities.

O&M = Operation and Maintenance

This figure does not alter the actions that EPA or the State may take under the reservation of rights described in the consent decree, Section XVII



| | | |
|------|----|-------------|
| DATE | BY | DESCRIPTION |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| | | |
|------|----|-------------|
| DATE | BY | DESCRIPTION |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

CORRIDOR AREAS FIGURE

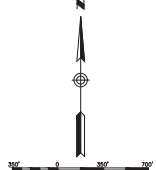
| | |
|------------|----------------------------|
| PROJECT | ATLANTIC RIFIELD BUTTE, WY |
| CLIENT | BUTTE PRIORITY SOILS OU |
| DRAWN BY | |
| CHECKED BY | |
| DATE | |
| SCALE | |
| SHEET | 1 OF 1 |
| FIGURE | 7-2 |

NOTES

1. NO NEW BMPs ARE REQUIRED WITHIN THE MONTANA STREET STORMWATER DRAINAGE AREA OR OUTFALLS/RUNOFF FROM I-90 TO SURFACE WATER. THESE STRUCTURES COLLECT STORMWATER FROM URBAN SOURCES AND NOT FROM HISTORIC MINE WASTE SOURCES.
2. MAGENTA AREAS ON THIS FIGURE REPRESENT THE CORRIDOR, AS DEFINED BY THE COMPLIANCE DETERMINATION PLAN. OTHER AREAS THAT DRAIN TO THE UNCONTROLLED SURFACE FLOW AREA BMPs AND OTHER BMP BASINS, AS CONSTRUCTED, ARE NOT WITHIN THE CORRIDOR. THE UNCONTROLLED SURFACE FLOW AREA BMP LOCATIONS ARE SUBJECT TO THE FINAL DESIGN AS DESCRIBED IN ATTACHMENT C, PART 9 (FURTHER REMEDIAL ELEMENTS SCOPE OF WORK).

LEGEND

- BPSOU BOUNDARY
- PROPOSED REMEDIAL ACTION AREAS
- ADDITIONAL RESPONSE ACTION AREAS

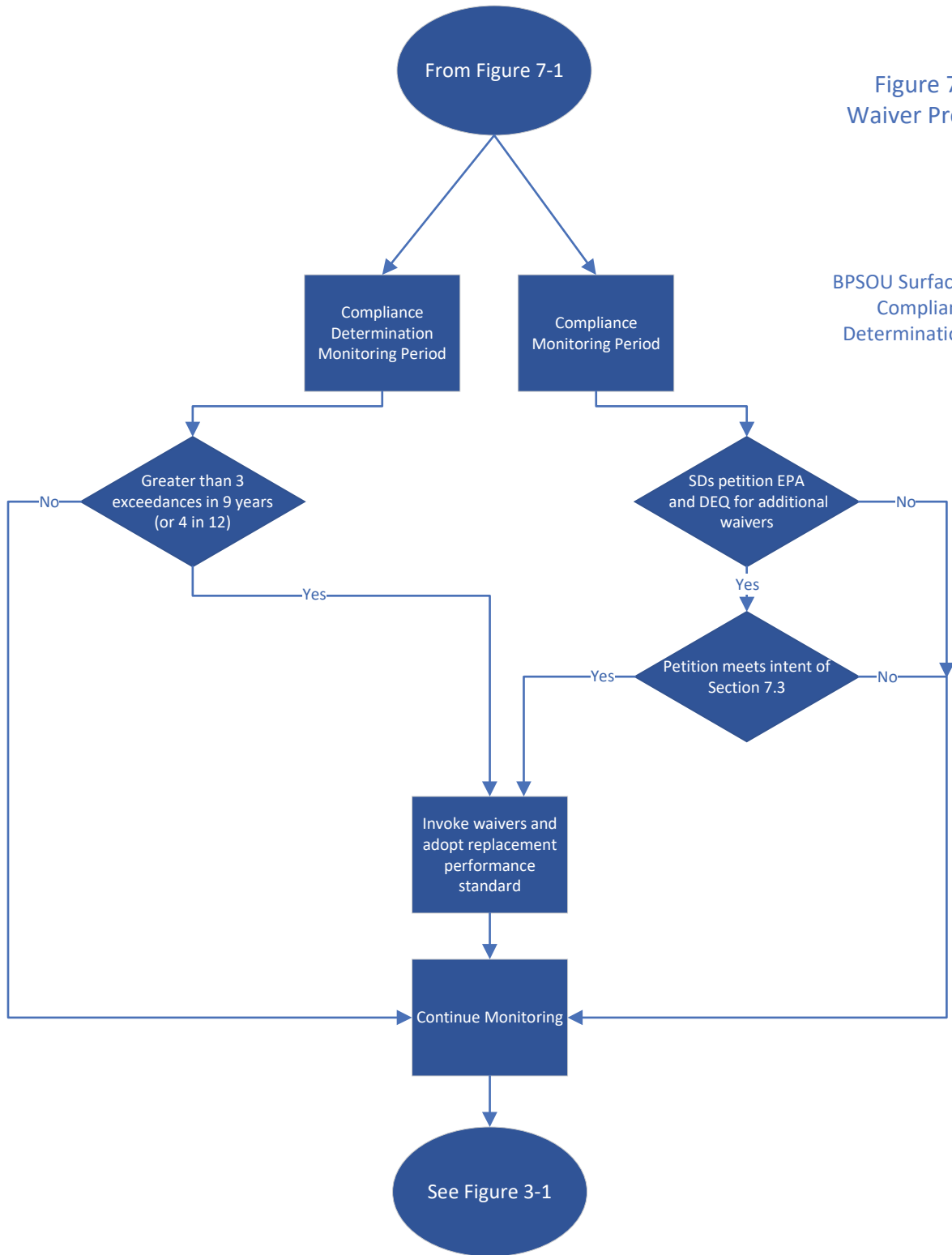


FIGURE

7-2

Figure 7-3
Waiver Process

BPSOU Surface Water
Compliance
Determination Plan



BPSOU SURFACE WATER MANAGEMENT PLAN

BUTTE PRIORITY SOILS OPERABLE UNIT
of the
SILVER BOW CREEK / BUTTE AREA SUPERFUND SITE
Butte-Silver Bow County, Montana

EXHIBIT 1 TO ATTACHMENT A TO APPENDIX D
TO THE CONSENT DECREE