



MEMORANDUM

TO: Members of the Trustee Restoration Council:
Tracy Stone-Manning, Chief of Staff, Governor's Office
Bill Rossbach, Chair, UCFRB Advisory Council
Elizabeth Erickson, Chair, BNRC
Tim Fox, Attorney General
John Tubbs, Director, DNRC
Tom Livers, Director, DEQ
Jeff Hagener, Director, FWP

FROM: Doug Martin, NRDP

DATE: June 1, 2016

SUBJECT: Trustee Restoration Council Meeting on June 6, 2016

The Trustee Restoration Council (TRC) will meet on **Monday, June 6, 2016 from 2:00 to 4:30 p.m. in Room 172 of the Capitol**. Attached are the meeting agenda and backup materials. All of these materials are also available on the NRDP website at <https://dojmt.gov/lands/trustee-restoration-council/>.

Following is a description of the agenda items:

Program Updates: The NRDP welcomes Alicia Stickney, Environmental Scientist and Kathrine Haque-Hausrath, Staff Attorney.

Butte Area One Restoration Plan Amendment – Parrot Tailings Removal Project – Action Item

The TRC will consider and decide on its recommendation to the Governor for the Butte Area One Restoration Plan Amendment – Parrot Tailings Removal Project. The draft Amendment to the Butte Area One Restoration Plan was subject to a 30-day public comment period from December 31, 2015 through February 1, 2016, as well as presented to the Butte Natural Resource Council (BNRC) December 29, 2015 and at the UCFRB Advisory Council meeting in Butte on February 17, 2016. Fifteen public comment letters were received during the comment period and nine oral comments were received at a public hearing held in Butte on January 14, 2016. NRDP staff prepared and will present a Draft Response to Comments to the BNRC on June 2, 2016 in Butte. At the meeting Jim Ford, NRDP, will summarize the draft Amendment and draft Response to Comments. Elizabeth Erickson will next provide the BNRC's recommendation and input. NRDP staff proposes to incorporate this draft final Amendment into the Butte Area One Restoration Plan.

Copies of NRDP's Draft Butte Area One Restoration Plan Amendment – Parrot Tailings Removal Project and the Draft Response to Comments are attached.

Butte Area One Restoration Plan 2016 Small Projects – Action Item

The TRC will consider and decide on its recommendation to the Governor for the Butte Area One Restoration Plan 2016 Small Projects. The TRC will consider 10 small projects of \$100,000 or less. Nine project proposals were presented to the BNRC and the public on March 31, 2016 and one proposal was presented at the BNRC meeting on April 7, 2016. These projects are summarized in the attached criteria evaluation tables prepared by the NRDP. At the meeting Pat Cunneen, NRDP, will summarize each project and provide the staff and BNRC funding recommendation. Elizabeth Erickson will provide the BNRC input. Following the consideration of public comment, the TRC will vote on its funding recommendation to the Governor for each of the ten projects.

Copies of NRDP's criteria evaluation tables for the Small Projects are attached.

Draft Final SSTOU Remediation Fund/SBC Excess Fund Revision to the UCFRB Aquatic and Terrestrial Resources Restoration Plans – Action Item

The TRC will consider and decide on its recommendation to the Governor for the Draft Final SSTOU Remediation Fund/SBC Excess Fund Revision to the UCFRB Aquatic and Terrestrial Resources Restoration Plans. The draft revision to the UCFRB Aquatic and Terrestrial Resources Restoration Plans was subject to a 30-day public comment period, February 12, 2016 through March 14, 2016, as well as presented at the UCFRB Advisory Council meeting in Butte on February 17, 2016. Nine public comments were received during this period. At the meeting the draft Revision and draft Response to Comments will be presented. Bill Rossbach will provide the UCFRB Advisory Council's recommendation and input. NRDP staff prepared and presented a Draft Response to Comments to the UCFRB Advisory Council on May 17, 2016 in Butte. NRDP staff proposes to incorporate the Draft Final SSTOU Remediation Fund/SBC Excess Fund Revision to the UCFRB Aquatic and Terrestrial Resources Restoration Plans.

Copies of NRDP's Draft Final SSTOU Remediation Fund/SBC Excess Fund Revision and the Draft Response to Comments are attached.

Clark Fork Watershed Education Program – Action Item

The TRC will consider and decide on its recommendation to the Governor to approve the 2017/2018 budget for the Clark Fork Watershed Education Program. The Clark Fork Watershed Education Program was allocated \$4 million in the 2012 UCFRB Aquatic and Terrestrial Resources Restoration Plans. The Clark Fork Watershed Education Program is required to present its biannual budget for approval. Rayelynn Connole with the Clark Fork Watershed Education Program presented their report and budget to the UCFRB Advisory Council on May 17, 2016. At the meeting the 2017/2018 budget will be presented. Bill Rossbach will provide the UCFRB Advisory Council's recommendation and input. NRDP staff recommends the 2017/2018 Clark Fork Watershed Education Program for funding with the funding condition that renewed efforts be made to incorporate the CSKT schools in the program and a recognition that, if current budget increases continue, the funding will not meet the ten year projections.

Copies of CFWEP 2017/2018 budget are attached.

Trustee Restoration Council Meeting
Monday, June 6, 2016
2:00 to 4:30 PM
Room 172 of the Capitol

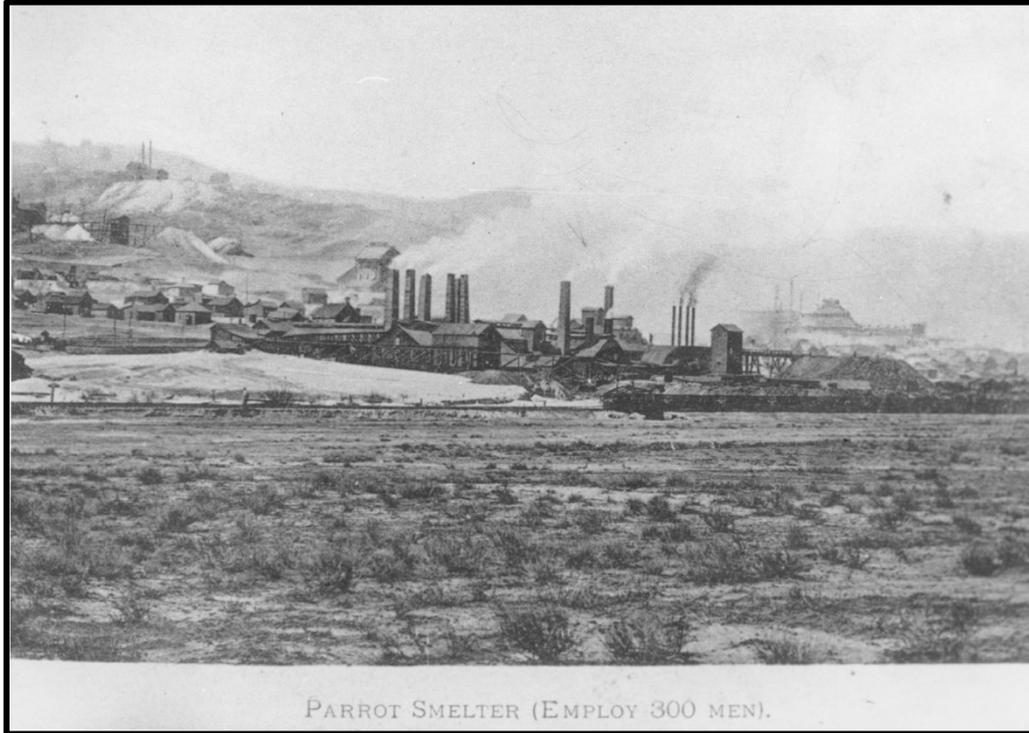
AGENDA

- 2:00 – 2:10 Introductions and Meeting Overview – Tracy Stone-Manning, TRC Chair
- 2:10 – 2:40 Butte Area One Restoration Plan Draft Amendment – Parrot Tailings Removal Project – Action Item
- Summary of Draft Final BAO Amendment and Response to Public Comment– Jim Ford and Harley Harris, NRDP
 - BNRC Advisory Council Input – Elizabeth Erickson, Chair
 - Public Comment
 - TRC Discussion, Input, and Action on Recommendation – facilitated by Tracy Stone-Manning, TRC Chair
- 2:40 – 3:30 Butte Area One Restoration Plan Small Projects (10 projects) – Action Item
- Summary of 2016 BAO Small Projects– Pat Cunneen, NRDP
 - BNRC Advisory Council Input – Elizabeth Erickson, Chair
 - Public Comment
 - TRC Discussion, Input, and Action on Recommendation – facilitated by Tracy Stone-Manning, TRC Chair
- 3:30 – 4:00 SSTOU/SBC Excess Funds Revision to the UCFRB Aquatic and Terrestrial Restoration Plans – Action Item
- Summary of Draft Final Revision and Response to Public Comment– Doug Martin and Harley Harris, NRDP
 - UCFRB Advisory Council Input – Bill Rossbach, Chair
 - Public Comment
 - TRC Discussion, Input, and Action on Recommendation – facilitated by Tracy Stone-Manning, TRC Chair
- 4:00 – 4:20 Clark Fork Watershed Education Program 2017/18 Budget – Action Item
- Summary of CFWEP Proposed Budget – Kathy Coleman, NRDP, and Rayelynn Connole, CFWEP Director
 - UCFRB Advisory Council Input – Bill Rossbach, Chair
 - Public Comment
 - TRC Discussion, Input, and Action on Recommendation – facilitated by Tracy Stone-Manning, TRC Chair
- 4:20 – 4:30 Additional Public Comments/Adjourn

Note: All meeting materials are posted on the NRDP website at: <https://doj.mt.gov/lands/advisory-councils/>

Butte Area One

Draft Restoration Plan Amendment



Parrot Tailings Waste Removal

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June 2016

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1.0 INTRODUCTION

This draft Butte Area One (BAO) Restoration Plan Amendment (Amendment) describes the primary work necessary to address contamination associated with the Parrot Tailings, including: waste removal design (waste volumes, removal and disposal, overburden removal and placement, transport, and disposal location.); construction dewatering; facility salvage/demolition; utility abandonment; transportation planning; worker and public safety, monitoring well protection/abandonment/replacement; bidding and construction; project phasing/sequencing; and post-removal surface grading for end land use. The draft Amendment would be the second amendment to the 2012 Butte Area One Final Restoration Plan (BAO Plan), and a further development of the 2015 Preliminary Conceptual Restoration Plan (PCRP) for the Parrot Tailings waste.

The draft Amendment is subject to a 32-day public comment period, ending Monday, February 1, 2016 at 5:00 p.m. A public meeting will be held on Thursday, January 14, 2016 beginning at 6 p.m. at the Butte-Silver Bow Public Archives, 17 West Quartz Street, Butte, Montana.

Future BAO Plan amendment(s) would address BAO Plan actions for Diggings East, Northside Tailings, and other areas of mine wastes in and around Blacktail and Silver Bow Creek and their adjacent floodplains.

2.0 BUTTE AREA ONE RESTORATION PLAN BACKGROUND

2.1 Background and Purpose

In 1983, the State of Montana filed a lawsuit in federal District Court against the Atlantic Richfield Co. (ARCO) for injuries to the natural resources in the Upper Clark Fork River Basin (UCFRB), which extends from Butte to Milltown. The *Montana v. ARCO* lawsuit, brought under federal and state Superfund laws, sought damages from ARCO, contending that decades of mining and smelting in the Butte and Anaconda areas had injured natural resources in the basin and deprived Montanans of their use.

The State settled *Montana v. ARCO* through a series of settlement agreements, or consent decrees, completed and approved by the Court in 1999, 2005 and 2008. The 1999 settlement provided approximately \$130 million in natural resource damages, which was placed into the UCFRB Restoration Fund. The 1999 settlement also included a provision for the future transfer of additional funds into the UCFRB Restoration Fund if later determined not to be required for the Streamside Tailings Operable Unit remedy.

The 2008 settlement focused on three injured areas in the UCFRB covered under the settlement agreement. One was the Butte Area One injured groundwater and surface water site. The 2008 *Montana v. ARCO* Consent Decree allocated \$28.1 million, plus interest, to restore, replace or acquire the equivalent of the injured groundwater and surface water of Butte Area One (BAO). The Butte Natural Resource Damage Restoration Council (BNRC), a nine member volunteer council, with assistance from the Montana Natural Resource Damage Program (NRDP), developed the BAO Plan to guide the expenditure of these funds. The BAO Plan built on the 2007 Butte Area One Draft Conceptual Restoration Plan, attached to the 2008 *Montana v. ARCO* Consent Decree. This draft Amendment has been preceded by the PCR, issued by NRDP for public input in February 2015, which focused on the Parrot Tailings, Diggings East and Northside Tailings, and the Blacktail Berm.

2.2 BAO Plan Implementation during Consent Decree Negotiations – Parrot Tailings Wastes

The BAO Plan states:

At this time a Consent Decree finalizing the remedial actions for Butte Priority Soils Operable Unit has not been reached, however, in keeping with their goal, the BNRC has produced this restoration plan in time for the Governor's consideration. Since the final Butte Priority Soils Operable Unit remedy plan is unknown, this restoration plan is not as specific as the council had desired. Instead, it offers enough flexibility that it should complement the future remedy and not take its place.

A major component of the BAO Plan is restoration of the Upper Silver Bow Creek corridor, which is above the confluence with Blacktail Creek. The BAO Plan calls for removal of mine wastes left

in place along the floodplain of Upper Silver Bow Creek through BAO, with an allocation of \$10 million towards that removal. The BAO Plan identifies these wastes, which include the Parrot Tailings, Diggings East, Northside Tailings, and other isolated areas of mine wastes in the Blacktail and Upper Silver Bow Creek floodplains, as the primary sources supplying inorganic contaminants to the alluvial groundwater, surface water, and in-stream sediment resources within the Upper Silver Bow Creek corridor. The BAO Plan noted that leaving these wastes in place was by far the greatest concern expressed by the majority of the citizens that responded during the public solicitation process.

The BAO Plan also states:

The restoration of the Upper Silver Bow Creek corridor, as provided above, will become part of a more definitive restoration plan that will be developed by the NRDP before the ongoing BPSOU Consent Decree negotiations are concluded. That plan will be funded with up to a \$10 million allocation provided for in this section and, it is envisioned, from other funding sources.

It was the State's intention, consistent with the BAO Plan, to implement Upper Silver Bow Creek corridor restoration in coordination with cleanup actions under the Butte Priority Soils Operable Unit (BPSOU) remedy and future consent decree. However, State discussions related to remedy / restoration coordination, as well as State discussions of remedy funding contribution have not sufficiently developed for submittal to the public for comment and further input.

This draft Amendment therefore seeks to implement a portion of the Upper Silver Bow Creek corridor actions ahead of the future consent decree, while still reserving and maintaining the State's positions regarding groundwater and surface water resources.¹ This draft Amendment addresses removal of the Parrot Tailings waste, and defers discussion regarding the Diggings East, Northside Tailings, and other areas of mine wastes in the Blacktail and Upper Silver Bow Creek floodplains.

A Butte Priority Soils Operable Unit consent decree remains the State's goal. The consent decree must be fair, reasonable, in the public interest, and consistent with the goals of CERCLA. This requires acceptable remedy/restoration coordination and an acceptable remedy funding contribution, as well as implementation of a protective and compliant remedy.²

¹ See for example the September 22, 2006 Partial Concurrence letter from Richard Opper, Montana Department of Environmental Quality Director, to Max H. Dodson, EPA Assistant Regional Administrator, regarding the BPSOU Record of Decision: "DEQ does not concur with the overarching decision to leave accessible, major sources of groundwater contamination in place. We refer specifically to the Parrot Tailings, Diggings East Tailings and the North Side Tailings. Our concern is that leaving these wastes in place poses a significant and permanent threat to groundwater and to the long-term water quality in Silver Bow Creek."

² The State retains and reserves all rights and authorities, including, but not limited to, those related to the BPSOU Record of Decision and BPSOU potentially responsible parties. This includes, but is not limited to, the groundwater and surface water components of the BPSOU Record of Decision remedy.

2.3 Parrot Tailings Wastes Removal Funding

The BAO Plan states:

Because this [Upper Silver Bow Creek] restoration could cost as much as \$30 million and because of the large number of other important projects to be accomplished using Butte Area One funds, the BNRC Restoration Recommendation would allocate \$10 million for restoration activities in the Upper Silver Bow Creek corridor and requests a match from other sources to complete the project.

Restoration activities could include land shaping and contouring; constructing sediment controls; waste removals, importing clean soils and soil amendments; revegetating disturbed areas; and replacing recreational or public facilities that would be eliminated incidental to waste removal activities. The BNRC prefers that the cost of waste removal be funded by other sources and not with Butte Area One restoration settlement monies.

Given that the BAO Plan allocates \$10 million towards the \$30 million Upper Silver Bow Creek project, and also includes a preference towards waste removal being funded from other sources, the State proposes to fund a portion of the Parrot project with an advance from unexpended money in the SSTOU/SBC Remediation Fund that is to be transferred to the UCFRB Restoration Fund and allocated to a reserve fund for specific projects in 2016.³

The State's determination of what amount can be transferred out of the SSTOU/SBC Remediation Fund is subject to approval by the U.S. Environmental Protection Agency. Utilization of the UCFRB Restoration Fund for the Parrot project requires a modification to the UCFRB Aquatic and Terrestrial Resources Restoration Plans, and will be subject to public comment, and input from the UCFRB Advisory Council and Trustee Restoration Council, prior to submittal to the Governor for approval. The draft modification to the UCFRB Aquatic and Terrestrial Resources Restoration Plans will shortly be issued for public comment.

The State believes that a significant portion of the Upper Silver Bow Creek corridor work is a responsibility of remedy. The State expects a remedy funding contribution to be received as part of the BPSOU consent decree.

³ Streamside Tailings Operable Unit (SST OU) Consent Decree paragraph 15.e states, "Any funds, including Earnings, in the SST OU Account which the United States and the State determine, pursuant to the [Site Specific Memorandum of Agreement], are not required for Future Response Costs and implementation of any modification of the ROD incurred by EPA or the State (including reasonable estimates for O&M) for the SST OU shall be transferred to the State's Upper Clark Fork River Basin Restoration Fund, established pursuant to paragraph 16 of the State CD."

2.4 Role of the BNRC and Public

The BAO Plan states:

The restoration of the Upper Silver Bow Creek corridor, as provided above, will become part of a more definitive restoration plan that will be developed by the NRDP before the ongoing BPSOU Consent Decree negotiations are concluded. That plan will be funded with up to a \$10 million allocation provided for in this section and, it is envisioned, from other funding sources. The more definitive plan, whether or not other sources are found to contribute to its funding, shall be treated as a “significant, substantial change” in this BAO Restoration Plan for the purposes of Section 6 [Restoration Plan Implementation], below, and will be subject to the same review and public comment steps before its final approval by the Governor as provided for in Section 6.

In accordance with the BAO Plan, this draft Amendment is the more definitive plan to describe the removal of the Parrot Tailings wastes portion of the Upper Silver Bow Creek mine waste removal. This draft Amendment was preceded by the 2015 Preliminary Conceptual Restoration Plan which described preliminary conceptual approaches for restoration of the Upper Silver Bow Creek corridor.

This draft Amendment would be the second amendment to the BAO Plan. The first, signed by Governor Bullock in July 2014, involved the small projects category of the BAO Plan.

Both the BNRC and the public have played a large role in the development of restoration actions and expenditures. This draft Amendment is subject to a 32-day public comment period, ending Monday, February 1, 2016 at 5:00 p.m. A public meeting will be held on Thursday, January 14, 2016 beginning at 6 pm at the Butte-Silver Bow Public Archives, 17 West Quartz Street.

In addition, the BNRC and NRDP will continue to hold meetings to provide a status of any ongoing developments, as well as provide a forum for restoration plan discussions.

The Governor as Trustee will make the final decision on the draft Amendment following consideration of the input of the Trustee Restoration Council, the BNRC, NRDP, and the public, consistent with Section 6 of the BAO Plan.

Should the Governor approve the Amendment, the public will also be informed about the development of the Parrot Design. An informational public meeting on a 30% Parrot Design would be held following Amendment approval, followed by a 2nd informational public meeting of the final Design prior to construction.

There will also be public comment related to the draft modification of the UCFRB Aquatic and Terrestrial Resources Restoration Plans discussed in Section 2.3, above.

3.0 PARROT TAILINGS BACKGROUND

3.1 Butte Area One Overview

The deposition of wastes within the City of Butte from mining and mineral-processing operations has resulted in injury to groundwater and surface water resources of the Upper Silver Bow Creek watershed.

The identified injured alluvial groundwater and surface water within Butte is located in the south central portion of the Butte Priority Soils Operable Unit, referred to as Butte Area One (BAO). The BAO is depicted in the red-outlined area on Figure T1.

Injury to groundwater in BAO has been demonstrated by the occurrence of concentrations of inorganic contaminants (including cadmium, zinc, iron, lead, copper, arsenic, and sulfate) that exceed State water quality standards in the alluvial aquifer. The areal extent of the known contamination above these standards in the alluvial aquifer is approximately one square mile.

The concentration of copper in Parrot Tailings area groundwater can exceed 1,000,000 parts per billion (ppb or ug/L). Similarly, the concentration of zinc and cadmium can exceed 500,000 ppb and 2,000 ppb respectively. In the Diggings East and Northside Tailings areas, some samples from the original soil horizon (black clay/silt) on which these wastes were deposited contain in excess of 2% copper and 2% zinc. A total mass of over 3,000,000 pounds of copper and 7,000,000 pounds of zinc are estimated to be contained in the unsaturated zone in these areas. Visual wastes are located all along the floodplains, stream banks and in-stream of Blacktail Creek and Silver Bow Creek within the BPSOU boundaries. These media have shown existing elevated contaminant concentrations of copper and zinc typically ranging from 2,000,000 to 5,000,000 ppb. A 10-inch slotted PVC sub-drain and associated gravel pack was installed below Upper Silver Bow Creek. This sub-drain was constructed to collect highly contaminated shallow near drain groundwater and keep it from discharging directly to Upper Silver Bow Creek.

These tailings and wastes will continue to release hazardous substances to the groundwater and surface water of Blacktail Creek and Silver Bow Creek for many centuries, if not thousands of years unless addressed.

3.2 History of Parrot Tailings

The history of the Parrot Tailings site was well-described in the following excerpt from the Montana Bureau of Mines and Geology (MBMG) Open File Report No. 590 (MBMG, 2010):

The mine waste (tailings and slag) concentrated in this study area are mostly the result of mineral processing and refining operations of the Parrot Smelter. Construction of the Parrot began in August of 1880. The smelter was completed in July 1881 and consisted of open stalls for roasting lump ore, reverberatory roasters, and matting reverberatory furnaces. In 1884, with the installation of six converters, the Parrot was the first smelter in the United States to successfully produce blister copper from copper matte using the Bessemer process (Southwick,

2008). With the installation of the converters, the Parrot was processing about 350 tons/day ore and producing about 25,000 pounds of copper per day, and discharging roughly 110 tons/day of tailings (Quivik, 1998). In 1886, the Parrot had increased its facilities, and was the second largest copper producer in the district. Besides smelting, the Parrot also had a concentrating plant used to treat the second-class ore prior to smelting, which produced a significant amount of tailings. The concentrating plant consisted of crushing equipment, jigs, and vanning tables, and was capable of processing 250 tons of ore per day. The Anaconda Copper Mining Company (ACM) purchased the Parrot Smelter and closed the facility in 1899.

During the mid-1950s, the Anaconda Mining Company placed large volumes of Berkeley Pit overburden (Butte quartz monzonite) on top of the Parrot Tailings. Previous investigations have documented fill material thicknesses from 1-foot to more than 22-feet in several locations overlying the Parrot Tailings, and slag thicknesses range from 0 to 21.5-feet. Waste material is present in the form of a yellow to grey tailings layer that has a documented thicknesses from 0 to 14 feet, and a black organic rich clay and silt layer with documented thicknesses ranging from 0 to 4 feet. The black clay layer has been interpreted in these previous studies as being the pre-mining native soil surface of the Silver Bow Creek floodplain. This black clay layer underlies a majority of the mine waste materials. Leachate from the tailings layer has permeated the black clay and contaminated these fine-grained soils with contaminant levels that are now typically higher than the overlying tailings and mining wastes.

3.3 Goals and Objectives for Parrot Tailings Waste Removal

Previous investigations have documented high contaminant soil concentrations of arsenic, copper, cadmium, lead, and zinc in tailings and other waste materials in and around the Parrot Tailings Waste Removal Area (WRA) as shown in Figure T-1. These contaminants are associated with the source area wastes, as well as leaching impacts to underlying soils and groundwater. Groundwater underlying the site is severely contaminated with these same contaminants, as well as contamination of cadmium, iron, and manganese. The ultimate discharge point for all alluvial groundwater in the Butte areas is Blacktail Creek and Silver Bow Creek.

The BAO Plan objectives of removing mine wastes left in place in Butte Area One are to eliminate known sources of heavy metal contamination to alluvial groundwater and surface water; to restore the area to a beneficial end use; to enhance the area riparian corridors; and to improve the quality of the fishery in Blacktail Creek and Upper Silver Bow Creek.

A project-specific refinement of the BAO Plan objectives for the Parrot project are to protect Blacktail Creek and Silver Bow Creek aquatic resources (surface water and in-stream sediment) from contaminated groundwater discharge and improve the quality of the creeks' fishery and aquatic macro-invertebrate communities.

In preparation for the Parrot project and in order to better define geological and environmental conditions, in late summer of 2015, NRDP conducted a design data gap investigation of the Parrot

Tailings and surrounding areas. NRDP then hired the team of Water & Environmental Technologies, Inc. (WET) and Morrison-Maierle, Inc. (MMI) in October 2015 to prepare a waste removal design. This Amendment provides additional details on the proposed Parrot Tailings waste removal activities, which will inform the Parrot Design.

3.4 Waste Removal Activities

3.4.1 Waste Removal Lithology and Removal Extent

Lithology

The WRA is located near the Butte Civic Center as shown in Figure T-2. The typical lithological profile of the WRA consists of a varying thickness of native and imported fill material placed on top of intermittent smelter slag and/or tailing piles. The slag or tailings lay on top of an organic clay/silt layer, which has been interpreted as the original Upper Silver Bow Creek floodplain soil horizon. For the purposes of this draft Amendment, the Butte quartz monzonite and slag will be included in the “overburden” category, and the tailings, waste rock and organic clay/silt will be combined and classified as “waste.” Material underlying the organic clay/silt layer is part of the alluvial aquifer and will be classified as “alluvium.”

Figures T-3 and XS-1 through XS-3 show lithologic cross sections of the WRA. These soil and waste lithologies were developed using all available soil boring and monitoring well completion logs from previous studies of the Parrot Tailings, as well as the recent data gap investigation information. Boring log information is being used to create a 3-dimensional model to extrapolate the various lithologic surfaces. The site model is being updated with new data; as a result, soil cross-sections and volumes in this document are approximate and will be further refined during the design process.

Waste Removal Extent

A proposed WRA is illustrated in Figure T-3. This removal area was delineated using investigation activities (noted above) that identify waste location and extent based on soil lithology, contaminant concentration and leaching potential, and limitations presented by surrounding infrastructure. The proposed removal activities will excavate as much of the waste material as practicable, including the groundwater saturated wastes and wastes with high leaching potential. The tailings and organic clay/silt layers were identified by MBMG (2010) and the PCRFP as contaminated layers that are saturated and leach contaminants into the groundwater. Most of the tailings, organic clay/silt layer, and any intermixed alluvium encountered within the proposed waste removal area will be considered waste and will be removed. To support waste removal decisions via soil lithology, site specific soil screening levels are being developed as a secondary means of defining waste material. Field-screening during construction using a portable XRF analyzer will guide waste removal activities and document soil concentrations at removal limits.

Excavation Limitations

Previous studies have identified areas of overburden and waste material that exist outside the proposed WRA boundary. Significant infrastructure constraints exist making complete waste removal cost prohibitive and impracticable. In addition, potential remedy constraints exist that the

design will seek to address. Also, environmental considerations such as the groundwater divide, north of which the groundwater flows toward the Berkeley Pit, negate the need for removal in areas with significant infrastructure constraints if infiltration of precipitation is minimized by installing an evapotranspiration cover system to protect these unsaturated wastes (see section below).

Significant utility infrastructure exists along the north boundary of the WRA that are cost prohibitive and logistically impracticable to reroute and replace. These utilities include the Silver Lake Water Line, the Horseshoe Bend Effluent Line, and a Butte-Silver Bow (BSB) sanitary sewer main. Removing waste under the existing BNSF/Patriot Rail line and Shields Avenue are also cost prohibitive and logistically impracticable, as these are active lines that serve Montana Resources and other railroad customers.

Identified overburden and waste areas that cannot be feasibly removed will be left in place. These areas will be protected with an evapotranspiration (ET) cover system to minimize infiltration through these wastes and eliminate continued contamination of groundwater. The thin layer of tailings under the Butte Civic Center parking lot is limited and will not be removed due to these factors as well as the existing pavement which inhibits infiltration.

This Amendment will help inform the WRA design efforts that will need to account for multiple logistical and infrastructure needs associated with the project, including but not limited to:

- Refinement of overburden and waste volumes;
- Development of removal criteria;
- Determination of excavation methods and equipment;
- Protection of adjacent BNSF/Patriot Rail lines;
- Acceptance of landowners and other necessary parties;
- Removal/replacement of utilities located within and adjacent to the removal area;
- Design of a waste transport corridor that minimizes disruption to public safety and active mine operations;
- Refinement of disposal location;
- Determination of method to place waste;
- Compliance with all applicable laws and regulations;
- Minimization of impacts to surrounding properties and residents; and
- Implementation of storm water and dust control efforts during construction.

A Quality Assurance Project Plan (QAPP) will be developed to ensure that appropriate Quality Assurance / Quality Control (QA/QC) measures are implemented and monitored during the waste removal activities. The QAPP will be consistent with established EPA QA/QC programs to the extent applicable, and will clearly define construction protocols, data collection methods, and quality control procedures. A site-specific Health and Safety Plan (HASP) will be developed to establish safety protocols that will be employed throughout the project. The HASP will ensure that all oversight activities and construction contractor-developed procedures meet the appropriate Occupational Safety and Health Administration (OSHA) or Mine Safety Health Administration (MSHA) regulations.

3.4.2 Overburden and Waste Removal Volumes

Overburden and waste volume estimates have been provided in previous studies of the WRA. Table 1 includes the waste volumes provided in the 2010 MBMG report and the PCRCP.

Table 1. Removal Area Estimated Overburden and Waste Volumes (cubic yards)

Source	Overburden (cy)	Waste (cy)	Total Volume (cy)
MBMG Open File Report No. 590 (MBMG, 2010)	749,939	320,972	1,070,911
Preliminary Conceptual Restoration Plan (Confluence, 2015)	675,000	270,000	945,000

Differences in the volume estimates are due to the use of different removal boundaries in the two studies, as well as potential over-estimation of overburden volumes due to variable and intermittent lithologic layers.

The WRA design will use the 2015 data gap investigation data to refine the overburden and waste volumes prior to construction. It is important to recognize sloping along the perimeter of the removal area to protect existing utilities and infrastructure and to meet safety requirements will be necessary and will effectively reduce the volume of overburden and waste removed.

3.4.3 Waste Disposal Location

The BAO Plan requires that the wastes be disposed in an environmentally protective manner. The BAO Plan noted three potential waste disposal locations for the Parrot Tailings waste:

- (1) Butte Mine Waste Repository,
- (2) Berkeley Pit, and
- (3) Yankee Doodle Tailings Ponds.

Table 2 presents a comparative analysis of the Butte Mine Waste Repository and Berkeley Pit waste disposal locations using the BAO Plan legal criteria. The Yankee Doodle Tailings Ponds disposal location alternative was not included in the comparative analysis as the State is not including a disposal location alternative that would hamper the uninterrupted operation of Montana Resources activities.

Table 2. Comparative Analysis of Waste Disposal Locations

#	Assessment Criteria	Berkeley Pit	Mine Waste Repository
1	<i>Technical Feasibility</i>	Aspects of alternative are technically feasible	Aspects of alternative are technically feasible
2	<i>Relationship of Expected Costs to Expected Benefits</i>	Costs are commensurate with benefits	Costs are commensurate with benefits
3	<i>Cost-Effectiveness</i>	Aspects of alternative are more cost-effective	Aspects of alternative are less cost-effective
4	<i>Results of Response Actions</i>	Does not interfere with response actions	Does not interfere with response actions
5	<i>Adverse Environmental Impacts</i>	Temporary impacts associated with construction activity	Temporary impacts associated with construction activity
6	<i>Recovery Period and Potential for Natural Recovery</i>	Alternative would not affect recovery period	Alternative would not affect recovery period
7	<i>Human Health and Safety</i>	Alternative would be more protective of human health and safety	Alternative would be less protective of human health and safety
8	<i>Federal, State, and Tribal Policies, Rules, and Laws</i>	Alternative is consistent with Policies, Rules, and Laws	Alternative is consistent with Policies, Rules, and Laws
9	<i>Resources of Special Interest to the Tribes and DOI</i>	Alternative is consistent with MOA	Alternative is consistent with MOA

Based on the comparative analysis, placement of the Parrot wastes and any incidental overburden onto the south ramp of the Berkeley Pit is the preferred waste disposal location. The criteria that were most influential in this analysis were technical feasibility, cost-effectiveness, and human health and safety.

Technical feasibility: Both disposal options are technically feasible. Each alternative is based on proven technologies, construction methods, and scientific principles. The likelihood that either of the alternatives would achieve the objectives is relatively high. Disposal of wastes into the Butte Mine Waste Repository has been ongoing for numerous years demonstrating the technical feasibility of disposal. Similarly, placement of wastes into the Berkeley Pit has also been ongoing. The technical feasibility of transportation from the WRA to a waste disposal, clearly favors Berkeley Pit disposal due to the short distance between the WRA and disposal area, the minimum construction improvements needed for transportation, and the similar elevation between the WRA and disposal area.

Transport of wastes to the Berkeley Pit from the WRA would proceed on a dedicated road established on the railroad right of way and Montana Resources property. Use of the dedicated road would result in a short route (<2 miles round trip) without conflict with public street traffic, and would permit the use of large capacity (35-40 ton) off-road trucks versus the trucks allowed on

public streets (14 ton). Access would need to be granted by Montana Resources, and for the railroad right of way and crossing, Burlington Northern Santa Fe Railway (BNSF). Disposal would occur on a bedrock area along the southwest rim of the Berkeley Pit (Figure C-2).

Transport to the Butte Mine Waste Repository from the WRA would proceed either on public streets or on a dedicated road established on the railroad right of way and Montana Resources property, Atlantic Richfield and various other property owners, which might also partly include a former haul road that runs along the west side of the Berkeley Pit if practicable. Use of the dedicated road would result in a longer haul path (~6 miles round trip), and use of smaller off-road trucks. In addition to Montana Resources and BNSF access, access would also need to be granted by Atlantic Richfield, Butte-Silver Bow County, and potentially other land owners.

Transportation to the Butte Mine Waste Repository by dedicated road would involve switch backs to help lessen the effect of the approximate 600 foot vertical rise, and would lower the centerline grade of the roadway due to the steep terrain. Construction of the road would need grades to be held below 15% for off-road haul trucks, which due to the terrain, would need to be smaller than the large capacity (35-40 ton) off-road trucks which could be used to the Berkeley Pit. Transport to the Butte Mine Waste Repository on either the dedicated road or public streets would result in human health and safety impacts, as discussed below.

Cost-Effectiveness: Costs from the Montana Tech 2011 *Cost Estimate for the Removal of the Parrot Tailings*, referenced in the BAO Plan, were used for cost comparisons. The disposal options proposed in each alternative are cost effective since they can be accomplished with standard engineering practices, traditional construction methods, and readily available equipment and materials. However, the cost-effectiveness criteria favors disposal into the Berkeley Pit since cost for transportation and disposal into the Berkeley Pit is approximately \$2 million less than transportation and disposal at the Butte Mine Waste Repository by dedicated road or city streets (\$13.3 million compared to \$15.2 million / \$14.8 million), due primarily to costs of an approximate 2.7-mile road with a 600-foot vertical rise, and large cut and fill requirements for switchbacks. Transportation and disposal at the Butte Mine Waste Repository via public streets may be more cost-effective than a Butte Mine Waste Repository dedicated road; however, it significantly increases risk to public safety without commensurate benefit.

Human Health and Safety: Transportation to the Butte Mine Waste Repository on public streets would provide the least amount of public safety, by placing a significant number of truckloads on steep city streets. Transportation to the Butte Mine Waste Repository on a dedicated road would also include safety concerns due to the 600-foot vertical rise and significant switchbacks. No heightened safety concerns are associated with transportation to the Berkeley Pit. Safety concerns associated with placement of waste is comparable between the Butte Mine Waste Repository and Berkeley Pit location options. Analysis by the State design team shows that placement on the Berkeley Pit south ramp will lead to added safety within Berkeley Pit since it requires the least amount of worker and equipment access below Montana Resource's 100-foot buffer.

Results of Response Actions and Adverse Environmental Impacts: Both disposal options involve CERCLA remedies. The Butte Mine Waste Repository is part of the Butte Priority Soils Operable Unit and remedy, and the Berkeley Pit is part of the Butte Mine Flooding Operable Unit. For the Butte Mine Waste Repository disposal option, expansion of the repository would be necessary to accommodate the wastes. The wastes would be covered similarly to the other wastes within the Butte Mine Waste Repository. For the Berkeley Pit disposal option, disposal would need to take into account the Butte Mine Flooding remedy and consent decree requirements. The Consent Decree prohibits using the Mine Flooding Operable Unit in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed pursuant to the Consent Decree. Disposal of wastes into the Berkeley Pit is subject to approval by EPA and the involvement of Montana Resources and Atlantic Richfield. The Parrot wastes are of similar nature to existing wastes on the Berkeley Pit south ramp area, and no media would be affected by the placement of the wastes. The design team performed a stability analysis which determined placement of wastes on the Berkeley Pit south ramp area would be stable and safe. The State design team also performed both a geochemical and volumetric analysis to quantify any potential geochemical effects and to quantify the volumetric displacement of pit water if the waste was placed into the pit waters. It supported NRDP's expectation that the volumetric change and change to chemistry would be negligible. However, placement on the south ramp would lead to added safety in implementation of the Parrot Project.

3.5 Waste Dewatering

3.5.1 Groundwater Depth and Saturated Waste Extent

Groundwater elevations within the WRA are somewhat uncertain and will require additional evaluation during design. The PCRP indicated that shallow groundwater exists under the BSB Shop Complex, which partially saturates the waste materials. As estimated in the PCRP, approximately 9 acres of the WRA may be groundwater saturated with thicknesses ranging from 0 to 6.5-ft, depending on seasonal groundwater fluctuations. The PCRP also indicated that boreholes used to estimate the groundwater elevations in this area were completed prior to remediation activities within Upper Silver Bow Creek; as a result, the groundwater flow regime may not be the same. The 2015 Parrot design data gap investigation has collected groundwater elevation data indicating that groundwater elevations may be lower than reported in the PCRP.

It is anticipated that groundwater will be encountered in the wastes, as well as in the alluvium underlying the organic clay/silt layer waste. Greater groundwater volumes will most likely be encountered in the alluvium than in the waste due to the higher hydraulic conductivity of the alluvium.

3.5.2 Waste Removal Dewatering Design

Due the anticipated presence of groundwater during waste removal activities, a construction dewatering plan will be developed to lower water elevations below the proposed excavation depth.

The dewatering plan design will use historic and current data to define anticipated groundwater conditions during construction. Also to better understand the groundwater flow regime groundwater

dewatering tests will be conducted within the identified area of saturated waste. The dewatering tests will define aquifer characteristics such as horizontal and vertical gradients, hydraulic conductivities, transmissivities, and saturated thicknesses, and the effect of dewatering activities on the groundwater divide.

These aquifer characteristics will be used to model and design a site dewatering plan for the waste removal activities. The dewatering plan design will most likely consist of a series of dewatering wells, well points, infiltration galleries, trenches or some combination thereof to control groundwater elevations and make excavation within the saturated zone more efficient. A phased dewatering approach may be used as large-scale dewatering of the saturated waste may not be feasible.

3.5.3 Groundwater Disposal Plan

Based on groundwater quality data from previous investigations and ongoing monitoring activities, groundwater from dewatering operations is expected to be limited if properly sequenced. Potential disposal options for groundwater will be determined during design, and could potentially involve disposal for use in ongoing Montana Resources operations, Berkeley Pit, or the sub-drain.

3.5.4 Evapotranspiration Cover System

An objective of the Parrot Tailings waste removal activities is to eliminate known sources of inorganic contamination to alluvial groundwater and surface water. Parrot Tailings wastes which cannot be reasonably accessed and removed because of infrastructure or because of potential remedy constraints will be protected in-place with an Evapotranspiration (ET) Cover System. The purpose of ET cover systems is to protect groundwater resources by limiting infiltration of precipitation through wastes.

Unlike conventional engineered cover systems which use materials with low hydraulic permeability to minimize downward migration of precipitation (infiltration), ET cover systems use natural water balance components to minimize infiltration. ET cover systems rely on soil properties to store water until it is used by plants (transpired) or evaporated from the soil surface. Infiltration of precipitation through the Parrot Tailings wastes is a primary route of contaminants moving from the wastes to groundwater.

ET cover systems have been widely tested and monitored in the inter-mountain west and are the preferred method for safely protecting mine waste impacts to groundwater from infiltration of precipitation. The total thickness of ET cover systems will be determined in design, but is typically 42– 48 inches in precipitation zones such as Butte. Potential ET Cover System areas are shown in Figure C-1, with the exception that an ET cover system would not be placed in the park between Texas Avenue and the BSB county shops. In addition to the area identified in C-1, additional ET cover systems or other engineering controls to prevent infiltration will be implemented for areas within or adjacent to the WRA where waste cannot be feasibly removed. These areas include boundary areas where sloping requirements may prevent removal, and areas along existing railroad grades.

ET cover systems offer certain advantages over other more engineered infiltration barriers, such as superior long-term performance at limiting infiltration through wastes in semi-arid regions such as Butte, the establishment of robust and diverse native vegetation, the ability for passive recreational use of the cover area, and minimal long-term operation and maintenance.

The Parrot ET Cover System design will incorporate key design parameters such as climate, soil type, soil thickness, vegetation type, soil fertility, and vertical/horizontal infiltration. An operations and maintenance plan for the ET Cover System will be developed prior to construction.

3.5.5 Overburden

Overburden will consist of fill and slag excavated from the WRA. Selected rock and fill that is free of contamination will be returned to the WRA in order to establish grades necessary for post removal land uses.

Excess overburden, which will include slag, will also be placed beneath the ET Cover System in areas with an ET Cover System in order to minimize the potential for groundwater contamination from overburden. Potential overburden placement and ET Cover System areas are shown in Figure C-1, with the exception that potential overburden placement and ET Cover System would not occur in the park between Texas Avenue and the BSB county shops.

Final ET Cover System specifications, grades, and topography, will be determined once overburden volumes have been evaluated and finalized. Overburden placement may be limited in some areas by existing utilities and infrastructure.

3.6 Butte-Silver Bow Shop Complex Demolition

Removal of waste within the WRA will require demolition of the BSB Shop Complex (Figure C-3). Each of the existing buildings will be evaluated individually to develop either a cost-effective removal plan, or a potential salvage plan, if salvage is deemed feasible. The NRDP will coordinate with BSB to obtain available design and construction drawings for each of the existing buildings, utilities, and associated infrastructure. These drawings will be utilized to determine each building's construction type, the ability to be salvaged, or the best method of demolition.

During the BSB Shop Complex demolition design process, an environmental conditions assessment will be conducted to identify any evidence of hazardous wastes spills or leaks, lead paint or asbestos that will require an additional handling and disposal plan.

3.6.1 Demolition Plan

Once all building structure information and data are gathered, a demolition plan will be developed for the shop structures and associated area landscaping. If structures are deemed to have salvage value, a plan will be developed to recover these costs. Each structure will be evaluated to make this determination. A general contractor may be solicited to assist with determining a structure's salvage value. Structures/materials that cannot be salvaged will be scrapped and recycled. Unrecyclable materials will be hauled to the BSB landfill.

3.6.2 BSB Transition Coordination

Work on the portion of the WRA occupied by the BSB Shop Complex will be phased to assure that these Public Works Department operations will operate through 2016 and into portions of 2017 until relocated shops are constructed and ready for occupancy. Scheduling and coordination with BSB will occur during the transition to a new location, in order to minimize disruption to BSB Public Works operations. BSB Public Works operations will be established at their new location prior to demolishing the existing old complex.

3.7 Utilities and Transportation

3.7.1 Identify and Abandon Utilities

Multiple public and private utilities exist within the WRA and transportation corridor. A preliminary utilities plan, with proposed actions, is included in Figure C-4. This general plan will be used in discussion with individual utility owners to coordinate protection measures, removals, abandonments, and relocations to minimize any disruption in service.

Within the WRA, one impacted natural gas distribution line is primarily for service to the BSB Shop Complex. As a service line, it is expected that this will be cut and capped at the western project boundary and the line itself removed immediately before demolition of the buildings being serviced.

A second buried natural gas transmission line is located in the area of the transportation corridor along the northern boundaries of the WRA. Re-routing or protection measures for this line will be discussed with the utility owner and implemented as necessary.

Electrical service lines to the BSB Shop Complex will be removed in concert with the building demolition work. This work would not affect customers in the adjacent area. Larger transmission lines also are located along the northern boundaries of the WRA. At this time, it is anticipated that these lines will be protected and left in place. Prior to construction, coordination with the utility owner will take place to plan the most efficient strategy of maintaining these lines. If it is determined the lines need to be relocated, this work would occur on a schedule that would minimize disturbance to the surrounding community.

Water services to the BSB Shop Complex will be capped and removed from the project site. The WRA will be at or near a shut off valve to allow reconnection for needed services based on end land use demands. All water mains appear to be outside of the WRA, which will be confirmed to construction. The fire hydrant near the northeast corner of the Civic Center facility may require a temporary connection to maintain fire protection during the project.

The main sanitary sewer service from the BSB Shop Complex appears to be located along the southern boundary of the WRA. This service will be disconnected and capped as a stub for future use. The sewer main is near, but outside, the disturbance limits and will be protected in place with no disruption to service.

There are three main storm sewer facilities within the WRA and proposed ET Cover System areas. The first is the internal collection and conveyance piping network at the BSB Shop Complex. This series of manholes and pipes will be removed and the manholes salvaged to the extent feasible. The outfall from this collection system is south of the WRA and will be protected in place and maintained for use in future development. A second storm sewer main line, the Warren Avenue Main, passes through the northern and western boundary of the WRA. The outfall for the Warren Avenue Main is at the southwestern corner of the WRA. This line serves the Second Street neighborhood to the north and the Warren Avenue Hydrodynamic Device (HDD) near the western boundary of the WRA. The Warren Avenue storm main will be temporarily rerouted during construction and replaced upon completion. The HDD will be protected in place and will not be disturbed. A third storm sewer main, the Texas Avenue Main, passes through the proposed ET Cover System area on the east side of Silver Bow Creek. This line serves the Greeley Neighborhood to the east and the Texas Avenue HDD. This main and the HDD will be protected in place and will not be disturbed.

Communications lines within the WRA appear to be service lines. These will be removed with little to no disruption of service to the surrounding area.

3.7.2 Utilities Replacement

Once waste removal activities are complete, the area will be regraded with overburden material and brought to finish grade so that public and private utilities (power, gas, communication, fiber, water, sewer, stormwater) can be replaced. The design and construction of these utilities will be completed in accordance with the individual utility owner's requirements, standards, and specifications, and coordinated to serve the end land uses.

3.7.3 Civic Center Road Replacement

This project will require removal and reconstruction of approximately 1,800 feet of Civic Center Road. The limits of reconstruction are anticipated to extend from the east side of the Civic Center parking lots to the intersection with Texas Avenue. The 700 foot section adjacent to the Civic Center and the Butte-Silver Bow Transit Center, immediately east of Harrison Avenue will not be impacted.

Civic Center Road provides a connection between Harrison Avenue and Continental Drive via Texas Avenue. The route is a designated truck route, as outlined in the *2005 Butte-Silver Bow Transportation Plan Update*. This designation stems primarily from the traffic generated by the Butte Shop Complex located just east of the Civic Center. Existing horizontal and vertical alignments for the corridor are summarized as:

- From Harrison Avenue to the western boundary of the WRA, the road has a curb to curb width of approximately 48-ft with two 13-ft travel lanes and 11-ft shoulders. Sidewalks are provided along the north side of Civic Center Road. On the south side, sidewalks are provided from the intersection to the end of the Civic Center Building. This segment has an approximate slope of 1-percent and storm drain facilities.

- From the western boundary of the WRA to Texas Avenue, the roadway narrows to approximately 40-ft in width with two 12-ft travel lanes and 8-ft shoulders. Curb and gutter is provided along the majority of the Butte Shop Complex property on the south side. Near the culvert crossing at the east end, the shoulders narrow to 4-ft. Slopes along this segment vary from 1-percent to 0.5-percent. A steeper transition exists from the east boundary of the Civic Center parking as the road climbs the slope of the WRA. The slope along this segment is approximately 4 percent.

Final grade and road elevations will be determined during design; however, it is anticipated that the alignment of Civic Center Road will be generally consistent with the current road location. As part of the design process NRDP will coordinate with BSB so the needs of the intended future uses are considered. Issues to be considered:

- Need for additional turn lanes or other traffic control measures.
- Pedestrian access, with an evaluation to determine best routes, safety concerns, and future remedies.
- A storm drainage analysis to identify areas of concern. Findings will be incorporated into the design to alleviate issues.
- Proximity to rail embankment will be evaluated to determine if there are safety or operational issues.

Access along the northern side of Civic Center Road is currently unrestricted. As end land uses are finalized by BSB, the design will incorporate more defined access points. These maybe similar to the access locations for the existing Civic Center parking area. For this analysis the following tasks will be completed in coordination with BSB:

- Future traffic generation will be calculated. This information will be used as part of the development criteria for the road reconstruction.
- The roadway design vehicle will be selected after the future use evaluation.
- Plan and profile drawings will be developed based on the selected alignment, geometric changes, and identified drainage needs.
- Utility coordination will be completed to maximize compatibility with future end land uses.

3.7.4 Traffic Control

Beginning with Phase I, Civic Center Road will be closed to through traffic. The closed section will extend from the western project boundary to the intersection with Texas Avenue. The major features of the closure include:

- Access to the Butte-Silver Bow Transit Center and Civic Center / Civic Center parking areas from Harrison Avenue will not be restricted.
- Access for vehicles traveling to and from the Butte Shop Complex will be maintained until the Center is relocated.
- Butte-Silver Bow Transit buses will be rerouted, but no bus stops will be changed.
- The Alley Rally Site will be closed or relocated until the project is completed.

An overall project area traffic control map is shown in Figure C-10.

Through traffic will be rerouted on a signed detour until Civic Center Road reconstruction is completed. Traffic will be diverted off of Harrison Avenue to Grand Avenue as the alternate west-east route. Access to Shields Avenue / Farrel Street will continue uninterrupted from Texas Avenue. Similar to Civic Center Road, Grand Avenue is also a designated truck route and is expected to adequately handle additional traffic.

Grand Avenue is signalized at Harrison Avenue with a dedicated left turn lane for the southbound to eastbound movement. This existing traffic control is expected to handle the additional loading on Grand Avenue. There are also dedicated turn lanes for the westbound to northbound / southbound movements at the intersection. This intersection/route was selected due to its existing designation as a major collector, and because of its traffic safety controls.

It is expected that the detour will affect traffic levels on other local, minor streets to some extent. The area of streets which are expected to experience temporary additional traffic is generally described within boundaries as follows:

- Farrel Street and Second Street to the North;
- Atlantic Street to the West;
- George Street to the South; and
- Howard Avenue to the East.

Public notifications of closures or traffic control alterations will be provided in advance to residents. This will include any special accommodations for pedestrian or bicycle routes. Access to individual residences is not expected to be affected.

Prior to construction, the contractor will finalize the work zone safety plan and coordinate with this overall traffic control plan. Additional routes, safety control measures, signage, etc., may be employed to minimize interaction between the public and construction vehicle traffic. These are anticipated to be temporary measures and advance notification will be provided to residents.

3.8 Monitoring Well Protection, Abandonment, and/or Replacement Plan

The WRA has an existing monitoring well network that will be impacted by waste removal activities. As a result, a monitoring well protection/abandonment/replacement plan will be prepared to properly identify impacted wells and mitigation actions. Specifically, the plan will include the following information:

- Locations of all monitoring wells within the project area, including the WRA, overburden placement areas, transportation corridor, and disposal site.
- Identification of wells to be abandoned, wells to be replaced, and wells to be protected.
- Technical procedures for well abandonments and replacements, will be conducted in accordance with State of Montana DNRC requirements.

Table 3. Proposed Monitoring Well Protection/Abandonment/Replacement

Proposed Restoration Plan Action	Monitoring Well ID
Remove/Abandon and Replace During Construction	GS-09-01, GS-09-02, GS-09-03, GS-10A and B, GS-41S and D, GS-42S and D, GS-45, PT 14-1, PW-01
Abandon – Do Not Replace	AMC-11, PC-Test Well-MP, GS-7 (already abandoned)
Protected	AMW-08, AMC-12, GS-50 (AI-SD-614), AMC-11-20

Other stakeholders and agencies will be consulted in this effort, and NRDP staff will approve the final network. The current monitoring well network with proposed action is shown in Figure C-6.

3.9 Bidding and Construction

3.9.1 Development of Bid Documents

A consistent and recognizable bid document format will be utilized for this project. The documents will follow current NRDP bid document format, utilizing applicable documents and sections that the stakeholders, agencies, and potential bidders will recognize. The various sections will include:

- Standard terms and conditions;
- Information for bidders;
- Bid and contract documents;
- Special provisions;
- Appendices;
- Standard specifications; and
- Construction drawings.

The bid document will include the project design details presented in this Amendment and those developed during the design phase.

A draft final bid document will be prepared for review by NRDP, and once approved the final bid documents will be provided to BSB, stakeholders, applicable agencies, and the public. An engineer’s cost estimate for the waste removal will be generated to insure that the scope and budget for the work is within the overall project scope.

3.9.2 Bidding

The project will be advertised following State of Montana procurement and bidding requirements. At this time it is anticipated that the work will be performed under one general contract for a prime contractor.

The bid opening will be conducted by NRDP, a bid tabulation will be prepared, and after evaluating all bids a recommendation for award will be made. Once an award is approved, the award and contract documents will be prepared and executed by the successful contractor and NRDP.

3.9.3 Construction

With the execution of the contract documents, the successful contractor will be issued a notice to proceed to begin the removal activities as outlined in the bid documents. NRDP will further develop a construction management team to provide general administration of the construction contract and oversight of the work by the contractor, insuring compliance with the bid documents and all regulatory requirements. Throughout the project NRDP's construction management team will also be available to update stakeholders, other agencies, and the public on project status.

3.10 Construction Phasing and Schedule

As shown on Figure C-7 it is anticipated that construction for this project will occur over a currently anticipated two to three-year period and will be broken into various phases as necessary to complete the project. The Phase I activities will occur in 2016 consisting of transportation corridor development, site control and security, implementation of the closure of Civic Center Road to through traffic and an associated traffic control plan, and removal of overburden and waste materials north of Civic Center Road. In 2017 and or 2018, the BSB Shop Complex will be removed once the new facility is constructed and operational. After removal of the BSB Shop Complex buildings, Civic Center Road adjacent to the BSB Shop Complex will be removed to Texas Avenue and overburden and waste will be excavated on the south side of Civic Center Road.

During removal, demolition and site regrading activities, storm water handling and erosion control measures will be established, maintained and updated until final grading and utility reconstruction is completed. The current schedule is anticipating project completion in 2018.

3.11 Post-Removal Surface Grading Design

A post-removal surface grading plan will be prepared that will protect the removal area and surrounding capped overburden and adjacent remedy components on Upper Silver Bow Creek. The WRA will be regraded with overburden material and brought to finish grade so that wet and dry utilities (power, gas, communication, fiber, water, sewer, storm) can be installed and Civic Center Road reconstructed.

The final grading plan will be based on three primary factors:

- 1.) Ability to reuse overburden at the WRA or potentially place on other properties;
- 2.) Protection of capped overburden/waste and Upper Silver Bow Creek remedy components;
and
- 3.) End land use plans desired by BSB.

Potential overburden reuse locations are shown in Figure C-1. It is expected that some overburden material will need to be replaced on the WRA to meet grades acceptable to BSB and NRDP. A cut-fill analysis will be conducted to determine the most appropriate final site grades that will protect remedy components, minimize material handling, and meet BSB end land use plans. Depending on final volume of overburden removed and the WRA post removal surface, other locations to place overburden have been identified as shown in Figure C-1.

3.11.1 Grading Plan Options for End Land Use

After waste removal, the final surface for the WRA will be below the existing grade of surrounding properties. Overburden/fill material will be required to construct a surface that will be acceptable to BSB and NRDP. As an example, a consistent and relatively flat grade could be constructed using the Butte Civic Center parking lot as the controlling site elevation, sloping gently toward Silver Bow Creek. Grades around the perimeter of the removal area could be designed to match/complement other surrounding properties to the extent possible. Depending on overburden volumes and placement options, the site elevation may need to be raised in a tiered fashion, as suggested in the PCR. The post-removal surface grading plan is not anticipated to impact the existing Civic Center parking lot or other infrastructure.

3.11.2 Interim/Final Surfaces

Interim and final surfaces will be designed for the WRA to accommodate surface changes during and at the end of construction, including anticipated post-removal development. The interim WRA surface will ensure proper storm water drainage across the site, and will include a vegetated cover or other features to limit erosion until the final surface. Design and construction of final surface features within the WRA will be completed by the property owner following construction. The final WRA surface is subject to further development, and is anticipated to consist of a combination of asphalt parking lots, commercial buildings, and green space. Both the interim and final surface designs will limit infiltration at the site. Design requirements will be outlined for further development to ensure that the project is protected.

Figure T-3 shows potential overburden placement locations which are located north of the WRA and contain wastes to be protected in place by an ET cover system. These ET Cover Systems will in effect eliminate water infiltration through these in-place wastes, eliminating impacts to groundwater and ultimately surface water resources of Blacktail Creek and Silver Bow Creek.

4.0 REFERENCES

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**Draft Response to Public Comments on
DRAFT Butte Area One
Draft Restoration Plan Amendment
Parrot Tailings Waste Removal**

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**Draft Response to Public Comments on
December 2015 Draft Restoration Plan Amendment
Parrot Tailings Waste Removal**

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Section I. Introduction

On December 31, 2015, the State of Montana Department of Justice Natural Resource Damage Program (NRDP), released the Draft Restoration Plan Amendment – Parrot Tailings Waste Removal for public comment through February 1, 2016. For outreach on this public comment period, the NRDP sent notices of this opportunity for public comment to 373 individual/entities on its mailing lists and over 200 individuals on its e-mailing list, issued a press release, placed two sets of display ads in the Butte area newspaper, and conducted a public meeting on January 14, 2016, where NRDP also received oral public comments. The BNRC/NRDP also summarized the Draft Restoration Plan Amendment at the December 29, 2015 meeting of the Butte Natural Resource Council (BNRC).

The NRDP received a total of fifteen (15) comment letters during the public comment period. An additional eight (8) individuals provided oral comments at the public meeting. See Attachment B for a list of commenters, identified by a specific number that serves as a reference to the comment throughout this document. Attachment B also provides copies of the comment letters and oral comments from the public meeting, which are also available on the NRDP website at: <https://doj.mt.gov/lands/advisory-councils/>.

This draft document summarizes the comments received, with similar comments grouped together by category, and provides the responses organized by these categories. Some comment letters included information that is addressed in multiple categories. Oral comments received at the public meeting are noted with a “PH” prefix for the purposes of this document. Attachment A provides a table that lists all public comments by category.

Consideration of public comment coupled with the evolution of the Parrot Project design has led to modification of the proposed Parrot Project in two respects. First, Parrot Tailings wastes would be placed on the south ramp of the Berkeley Pit rather than into the Berkeley Pit water itself. Second, an ET cover system would no longer be placed in the park between Texas Avenue and the BSB county shops. Further rationale for these modifications is set forth below in the responses to public comment.

These draft responses are the subject of consideration at the June 2, 2016 BNRC meeting and will be considered at the June 6, 2016 meeting of the Trustee Restoration Council. The draft responses are to be revised based on input from the BNRC and the Trustee Restoration Council and forwarded to the Governor for his consideration.

Section II. Comment Summary and Response by Category

Category 1: General Support of the Draft Restoration Plan Amendment.

Comments: Six comment letters and two public comments at the public meeting indicated general support of the Draft Restoration Plan Amendment – Parrot Tailings Waste Removal (#3, #6, #9, #12-14; PH #7, #8). Trout Unlimited (#12) indicated general support for the plan amendment, but urged NRDP and its partners to approach the project with a very sharp pencil, and requests the final decision provide more detail on costs.

Response: NRDP appreciates the indicated support of the Draft Restoration Plan Amendment. In response to Trout Unlimited comment, final project costs will be determined upon bidding of the project. The State will consider the qualifications of contractors, bid price, and other appropriate factors when awarding a contract to the responsible bidder whose bid is in the best interest of the project.

Category 2: General Opposition of the Draft Restoration Plan Amendment.

Three comment letters and one comment at the public meeting were received in general opposition to Draft Restoration Plan Amendment (#1, #11, #15; PH #6).

Comment: Two of the four comments were received by same person, Larry Winstel (#1; PH #6). Mr. Winstel's comments state that the removal is unnecessary, and refers to conflicting information provided by EPA and the NRDP.

Response: The 2012 Butte Area One Final Restoration Plan (BAO Plan) calls for the removal of mine wastes, including the Parrot Tailings, left in place along the floodplain of upper Silver Bow Creek through BAO, with an allocation of \$10 million towards that removal.¹ The BAO Plan identifies these wastes as a primary source supplying inorganic contaminants to the alluvial groundwater, surface water, and instream sediment resources within the Upper Silver Bow Creek corridor. EPA's remedy for the Parrot Tailings allows the waste to remain in place. The State has studied the removal of the Parrot Tailings and concluded that these tailings and other associated wastes (Diggings East and Northside Tailings) are a primary source of contamination to the alluvial groundwater aquifer. This alluvial groundwater ultimately discharges to Blacktail Creek and Silver Bow Creek and continues to contaminate instream sediments and surface water.

Injury to groundwater in BAO has been demonstrated by the occurrence of concentrations of inorganic contaminants (including cadmium, zinc, iron, lead, copper, arsenic, and sulfate) that greatly exceed State water quality standards in the alluvial aquifer. The concentration of copper in Parrot Tailings area groundwater can exceed 1,000,000 parts per billion (ppb or ug/L). These

¹ The BAO Plan refers to the area as the Upper Silver Bow Creek corridor.

tailings and wastes will continue to release hazardous substances to the groundwater, surface water, and instream sediments of Blacktail Creek and Silver Bow Creek for many centuries, if not thousands of years, unless addressed. The Parrot Tailings wastes negatively impact natural resources associated with this area, including groundwater, surface water, instream sediments and aquatic life.

Area groundwater has a conductivity of 600 feet/day allowing the contaminated groundwater to be highly mobile (MBMG, 2012). The ultimate discharge point for all alluvial groundwater in the Butte Area One is Blacktail Creek and Silver Bow Creek. Preferential loading to instream sediments from low pH, highly contaminated groundwater has been shown on Silver Bow Creek as well as in national studies (Benner et al., ES&T, Vol. 29, No. 7, 1995; Davis et al, Applied Geochemistry 1996; Ford EPA, EPA/600/S-05/002). Riparian biota and fish that are dependent on instream sediment quality will be adversely impacted by this flux of acidic, contaminant-rich groundwater in the instream sediment zone. In addition, these contaminated instream sediments are mobilized and recontaminate sites within Subareas 1 and 2 of the SSTOU. (Respec, December 2014).

Comment: Tyler Pullman (#11) states that removal would result in a “substantial washout that would pollute the area that was already reclaimed.”

Response: The Parrot Project will have an erosion and sediment control plan prepared as part of construction activities that will protect any sediment or waste from reaching surface water. In addition, the excavation will not extend into the Silver Bow Creek channel, thereby preventing any washout of contaminated materials into the stream.

Comment: William Duffy submitted comments on behalf of Patricia Gallery and the Atlantic Richfield Company (AR, #15). Ms. Gallery’s letter disagrees with the NRDP’s position that the Parrot Tailings wastes should be removed, arguing that the existing remedy is effectively capturing groundwater and protecting the creek. The letter requests that the Parrot Project not interfere with existing remedies, and notes the need to coordinate remedy and restoration work moving forward.

Response: The NRDP and other State agencies have studied the removal of the Parrot Tailings and have concluded these wastes are a primary source of contamination to the alluvial groundwater aquifer and a source of contamination to Silver Bow Creek instream sediments and surface water. The September 22, 2006 Partial Concurrence letter from Richard Opper, Montana Department of Environmental Quality Director, to Max H. Dodson, EPA Assistant Regional Administrator, regarding the BPSOU Record of Decision, states: “DEQ does not concur with the overarching decision to leave accessible, major sources of groundwater contamination in place. We refer specifically to the Parrot Tailings, Diggings East Tailings and the North Side Tailings. Our concern is that leaving these wastes in place poses a significant and permanent threat to

groundwater and to the long-term water quality in Silver Bow Creek.” The draft Amendment seeks to implement the Parrot Project ahead of a future consent decree, while still reserving and maintaining the State’s positions regarding groundwater and surface water resources. The excavation associated with the Parrot Project will not extend into the Silver Bow Creek channel, and does not impact existing remedy features.

NRDP also favors coordination of remedy and restoration. This has worked successfully in the Streamside Tailings Operable Unit, the Clark Fork River Operable Unit, and the Milltown Operable Unit. A Butte Priority Soils Operable Unit consent decree remains the State’s goal. The consent decree must be fair, reasonable, in the public interest, and consistent with the goals of CERCLA. This requires acceptable remedy/restoration coordination and an acceptable remedy funding contribution, as well as implementation of a protective and compliant remedy.

Category 3: Use of Remedy versus Natural Resource Damage Funds.

Seven comment letters and three comments at the public meeting addressed funding issues related to the project (#3, #4, #6, #7, #10, #12, #13; PH #1, #3, #8). Generally, comments state the desire for the Parrot Tailings waste removal to be paid for with remedy funds instead of natural resource damage funds, although some comments support the use of natural resource damage funds as a backup funding source. A comment letter from Northey Tretheway (on behalf of Restore Our Creek Coalition) addresses two issues related to funding of the project (#13): the group supports the “use of SSTOU/SBC Remediation Funds for Upper Silver Bow Creek remediation work,” and they concur “that remedy funds are the correct use for the proposed cleanup.”

Three comment letters and one public meeting comment were submitted by Dr. John Ray (#4, #7, #10; PH #1). These comments are similar in that Dr. Ray’s desire is to reopen the Record of Decision for the Butte Priority Soils Operable Unit and require that wastes in the Silver Bow Creek corridor (Parrot Tailings, Northside Tailings, Diggings East, and Blacktail Berm) be removed under remedy.

Fritz Daily also submitted a comment requesting that the Parrot Tailings be removed with remedy funds, as well as the Diggings East, Northside Tailings, and Blacktail Berm; however, Mr. Daily’s letter does support the use of natural resource damage dollars if remedy dollars are not used (#3). Mr. Daily also comments there are sufficient funds to accomplish this task: \$70 million from the original settlement, \$45 million remains in the SBC cleanup, \$32 million from the Montana Pole settlement cleanup, and \$20 million from the Butte Priority Soils settlement.

Response: Natural resource damage funds may be used to restore, replace or acquire the equivalent of injured natural resources. In the case of the Parrot Tailings, EPA’s remedy allows these wastes to be left in place. The State believes removing these wastes is necessary to (1)

protect Blacktail and Silver Bow Creeks from ongoing and future contaminated groundwater discharge to the creeks and sediments, and (2) shorten the groundwater restoration recovery time. The BAO Plan directs the removal of mine wastes, including the Parrot Tailings, with a \$10 million allocation. Last year, Governor Bullock asked the State to take the necessary steps to initiate removal of the Parrot Tailings wastes. The Amendment to the BAO Restoration Plan for the Parrot Tailings Waste Removal is being developed by NRDP to implement the Governor's request, while still reserving and maintaining the State's positions regarding groundwater and surface water resources. NRDP agrees with commenters who believe there should be a remedy funding contribution towards removal. The State believes that a significant portion of the Upper Silver Bow Creek corridor work is a responsibility of remedy. The State expects an acceptable remedy funding contribution to be received as part of the BPSOU consent decree.

In response to Mr. Daily's comment that there are sufficient funds from other settlements to complete the remediation and restoration in BAO, these other settlements typically have different scopes, purposes, and requirements beyond the work necessary within BAO. The funds from other settlements have been allocated in consent decrees (SST OU and Montana Pole OU) or in restoration plans for specific actions in other areas based on resource priorities and public input (UCFRB Aquatic and Terrestrial Resources Restoration Plans). The BAO Restoration Plan allocated \$10 million for the upper Silver Bow Creek corridor; the UCFRB Aquatic and Terrestrial Resources Restoration Plans allow allocation of monies received in SSTOU/SBC Excess Remediation Funds, and NRDP is proposing to allocate \$8.5 million toward the Parrot Project, as discussed in the SSTOU/SBC Excess Remediation Funds Revision.

Category 4: Disposal in the Berkeley Pit.

Comment: Nine comment letters and two public comments were received that contained comments related to disposal of waste into the Berkeley Pit (#1, #2, #3, #6, #9, #11, #12, #13, #14; PH#5, PH#6). Six comment letters state their approval/concurrence with waste disposal in the Berkeley Pit (#3, #6, #9, #12, #13, #14). One comment letter voiced concern for dumping waste into the pit (#2), and one public comment voiced concerns over potential changes to the pit water level and chemistry (PH#5). Three comment letters stated general concerns regarding the rising pit water level and long-term treatment options.

Response: The comments focused on the proposed placement of the wastes directly into the Berkeley Pit waters. Consideration of public comment coupled with the evolution of the Parrot Project design has led to an alteration of this placement, with placement onto the south ramp of the Berkeley Pit rather than into the Berkeley Pit water itself. As part of design and with consideration of public comment, the design team focused on the Berkeley Pit, determining the safest placement would be to place the waste within the Pit area but not into the Pit water or below the critical water level. Analysis by the State design team shows that placement on the Berkeley Pit south ramp will lead to added safety within Berkeley Pit since it requires the least

amount of worker and equipment access below Montana Resource's 100-foot buffer. The design team also performed a stability analysis which determined placement of wastes on the Berkeley Pit south ramp area would be stable and safe. The State design team has also been performing both a geochemical and volumetric analysis to quantify any potential geochemical effects and to quantify the volumetric displacement of pit water due to waste disposal into the pit water or below the critical water level. The results of these analyses support NRDP's expectation that the volumetric change and change to chemistry is negligible. Though the Berkeley Pit volumetric and chemical change is shown to be negligible if the waste was placed into the pit waters, placement on the south ramp will lead to added safety in implementation of the Parrot Project.

As noted in the Draft Restoration Plan Amendment, disposal of wastes into the Berkeley Pit is subject to approval by EPA and the involvement of Montana Resources and Atlantic Richfield. In addition, as noted in the amendment, access would need to be granted by Montana Resources, and for the railroad right of way and crossing, Burlington Northern Santa Fe (BNSF).

Category 5: Evapotranspiration (ET) Cover Systems.

Comment: Two comment letters and two public comments were received regarding the use of Evapotranspiration (ET) cover systems and the testing of ET cover materials for lead and cadmium. (#8, #13, #14; PH#2, PH#3).

Dr. John Ray submitted a comment letter stating concerns with the protectiveness, installation, and maintenance of ET cover systems (#8).

Northey Tretheway, on behalf of the Restore Our Creek Coalition, included comments on ET cover systems in his letter (#13). Specifically, questions are raised about the appropriateness of an ET cover system in the park between Texas Avenue and the county shops. Mr. Tretheway also asks questions regarding what passive recreational activities would be allowed on an ET cover systems, and he states that ET cover systems should be used as a last resort.

Doug Coe provided public comment asking about the ET cover systems and their location relative to the groundwater divide and the potential for groundwater to mobilize wastes under the covers (PH#2).

Dan O'Neill provided public comment questioning whether long term studies have been done on ET caps (PH #3).

Response: ET cover systems have been installed at numerous mine waste locations in the intermountain west for over 30 years. ET cover systems have proven extremely effective at eliminating infiltration on sites in semi-arid to arid environments and with appropriate soils and vegetation when designed and constructed properly. Specific responses to general ET cover system construction, maintenance, and effectiveness concerns include the following responses:

- Cover System Tested Best Management Practices will be implemented to minimize the effect associated with burrowing animals, runoff, and erosion. (EPA Evapotranspiration Cover Systems for Waste Containment Fact Sheet, EPA 542-F-11-001)
- The State design team will use appropriate materials to construct ET covers for waste. Cracking caused by desiccation, freeze-thaw cycles, and differential settling is primarily associated with soils that have a high percentage of clays. The design will include the use of soils for ET cover systems that are typically well graded with some fine fractions and are classified as silty loams. Excessive cracking in these types of soil is not common. A robust inspection and maintenance program will ensure proper long-term effectiveness of the ET cover systems.
- There are numerous guidance documents provided by individual states that describe how to effectively install ET cover systems, which will assist the State in the design, construction, and maintenance.
- “ET cover systems are expected to cost less to construct. They are often aesthetic because they employ naturalized vegetation, require less maintenance once the vegetative system is established, including eliminating mowing, and may require fewer repairs than a barrier system.” (Rock, S., Myers, B., Fielder, L., Int j. of Phytoremediation, Evapotranspiration (ET) Covers, 2012).

Further investigation of the property between Texas Avenue and the BSB shops shows that there does not appear to be sufficient waste beneath this property. In addition, the presence of several major utilities (including the Texas Avenue Hydrodynamic Device and Silver Lake Water Line) as well as existing grade challenges limits the ability to properly install an ET Cover in this area. As a result, an ET cover system will not be installed in this location.

The groundwater in the Parrot area flows south, away from the groundwater divide, towards, and discharges into, Blacktail and Silver Bow Creeks. It is anticipated that ET cover systems will only be placed in areas where waste removal is not technically or financially feasible to implement, and where waste material is not in direct contact with groundwater. ET cover systems by design will prevent precipitation from infiltrating through the waste, thereby eliminating any potential for leaching of contaminants to groundwater or surface water.

End land use for areas with ET cover systems will be open space. The areas will be revegetated with appropriate native species, and a weed management plan will be implemented as part of the maintenance program. NRDP is currently evaluating sources of soil that are appropriate for the ET cover systems. The soil source will be selected as close to the project area as possible.

Comment: Comment #14 from Mary Kay Craig (on behalf of the Citizens for Preservation and Environmental Justice) requests that overburden be tested for lead and cadmium before being reused as cap material.

Response: NRDP does not anticipate that overburden excavated from the site will be used for the top layer of the ET cover systems; ET cover systems require a specific type of soil that will need to be imported to the site. NRDP will ensure that any surface material is protective of residential exposure, including for lead and cadmium.

Comment: Dan O'Neill (PH#3) made several comments in the public meeting related to the use of different construction equipment, methods, and other logistics during removal activities.

Response: Selected contractors must meet all design requirements and specifications. NRDP does not, however, determine the means and methods contractors will use to implement the design. NRDP will hold an informational public meeting on the design prior to construction.

Category 6: Groundwater.

Comment: Two comment letters and one public comment contained comments related to groundwater (#13, #14, PH#2). Northey Tretheway (on behalf of Restore Our Creek) asked about future plans for groundwater treatment and coordination with end land use, as well as predictions on temporary impacts associated with removal activities (#13). The remaining two comments are related to the migration of groundwater through tailings and their location downstream of the groundwater divide (#14, PH#2).

Response: During construction, groundwater dewatering and treatment will likely be necessary in order to complete waste removal activities near or below groundwater. Water from the dewatering operations will be appropriately addressed, either through the existing treatment system or by use in an industrial system, but will not be discharged untreated to waters of the State. Construction activities can result in short term impacts to water quality; the Parrot Project will meet construction stormwater requirements. The overall long-term water quality impact to area ground and surface waters in the Silver Bow Creek corridor will be positive as a result of the Parrot Project. End land use in the removal area will be determined by BSB, as the land owner, but uses will be implemented in a manner that includes any appropriate engineering controls needed to protect the waste removal action, the Silver Bow Creek corridor, and do not impact existing remedy features or future waste removal activities downstream.

Category 7: Waste Removal Comments.

NRDP received three comment letters and one public meeting comment concerning areas of waste removal.

Comment: Comment #5 by Dr. John Ray states that institutional controls are problematic and that wastes associated with the Parrot Tailings should be removed and not managed by institutional controls.

Response: NRDP agrees that institutional controls alone should not be relied upon too heavily to manage Parrot Tailings wastes. The goal of the Draft Restoration Plan Amendment – Parrot Tailings Waste Removal is to remove the maximum volume of waste; however, significant infrastructure limitations are present in certain areas that limit the ability to achieve complete waste removal. In locations where waste cannot be feasibly removed, appropriate institutional controls must be implemented to ensure that end land uses (ET cover systems, redevelopment, etc.) are constructed and maintained to function properly in perpetuity. Institutional controls are commonly and successfully used on remediation projects across the country, and will be necessary here where removal is not feasible.

Comment: Comment #11 from Tyler Pullman states that “the state should be required to prove via water samples taken from the Clark Fork drainage that the Parrot Tailings are contributing to the pollution of the watershed to a statistically significant amount before action is taken.”

Response: The ground and surface water, and instream sediment data clearly show that there are ongoing impacts to surface water and instream sediments from contaminated groundwater. Exceedances of aquatic life standards for surface water occur and instream sediments contaminant concentrations are extremely elevated above various benchmarks for risks to stream environments, exceeding EPA sediment screening benchmarks by up to 4 orders of magnitude.

Category 8: Miscellaneous Comments.

NRDP received a number of comments on miscellaneous items related to the Draft Restoration Plan Amendment – Parrot Tailings Waste Removal, which are addressed individually in this section.

Comment: Comment #1 by Larry Winstel questions why the NRDP reports that the county shops will be moved when demolition is clearly intended. Comment #14 from Mary Kay Craig (on behalf of the Citizens for Preservation and Environmental Justice) comments the County Shops not be placed at the Montana Pole Treatment Plant Superfund site because no exposure to dioxin is safe.

Response: Section 3.6 of the Draft Restoration Plan Amendment is titled “Butte-Silver Bow County Shop Demolition” which describes the proposed demolition of the shops. A separate but coordinated effort to relocate the county shops prior to demolition is being conducted by Butte-Silver Bow officials. The selection of a new shop location has been completed by Butte-Silver Bow and it is NRDP’s understanding that a location on Centennial Drive has been selected.

Comment: Comment #3 by Fritz Daily makes several references to establishing a “quality meandering Silver Bow Creek” flowing through Butte.

Response: The wastes along the Upper Silver Bow Creek corridor are the primary sources supplying inorganic contaminants to the alluvial groundwater, surface water, and instream sediment resources within the Upper Silver Bow Creek corridor. The excavation associated with the Parrot Project will not extend into the Silver Bow Creek channel, and does not impact existing remedy features. Through the removal of contamination, the Parrot Project will help the State meet the goals of the BAO Plan by improving water quality, streambed sediments, and ultimately the fishery of Silver Bow Creek.

Comment: Comment #9 by Christopher Gammons states a desire to collect samples of soil and groundwater in order to conduct research and analysis.

Response: Waste removal activities will be conducted in accordance with an approved Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP). The SAP/QAPP will clearly define construction protocol, data collection methods, and quality control procedures. NRDP will collect numerous samples throughout the project, and is willing to share these samples with appropriate entities for the purposes of research and analysis.

Comment: Comment #13 from Northey Tretheway (on behalf of Restore Our Creek) states that final grading should support the end land use and not detract from the aesthetics of the area. The comment letter also states that easements should be requested from the railroad to allow for future access for pedestrians as well as future removal activities.

Response: During the design process, NRDP will develop a post-removal grading plan in coordination with landowner BSB. BSB will determine the end land use. Areas that are not immediately developed will be revegetated to minimize erosion and stormwater runoff.

Comment: Comment #14 from Mary Kay Craig (on behalf of the Citizens for Preservation and Environmental Justice) states that bidders comply with prevailing wage requirements.

Response: NRDP will be following the State of Montana procurement laws and policies throughout the bidding process and the selection of contractors for work on the project. All bid documents will clearly state that the successful bidder must comply with all state prevailing wage requirements.

Comment: Dan O'Neill (PH#3) asked a question in the public meeting why waste material under the Civic Center is not being removed while waste material under the county shops is being removed, since both are capped with asphalt.

Response: NRDP is proposing waste removal under the BSB county shops because this area contains a significant volume of waste that is also in contact with groundwater. The presence of waste near the Butte Civic Center building and to the north of the Civic Center is very limited; as a result, removal is not warranted or cost-effective.

Comment: Kellee Anderson stated in the public meeting (PH#4) that she would offer her services as a horticulturist during revegetation activities at the site.

Response: NRDP appreciates the offer of assistance during revegetation. This project must be completed by contractors procured through the State procurement process.

Comment: Fritz Daily (Comment #3) commented that the cleanup and restoration must include removing the tailings, addressing the French drain issue that the State claims is not collecting all of the contaminated groundwater as EPA and ARCO claim, and responsibly address the storm water issue. Commenter does not support using stormwater retention ponds to address the storm water issue.

Response: Although the State has consistently voiced concerns about the effectiveness of the subdrain system, as this system is a component of EPA's remedial action, NRDP will not take actions that may alter this system. A discussion of stormwater retention ponds is outside the scope of the Amendment, but the State has consistently advocated for robust stormwater controls.

Comment: Tyler Pullman comment about traffic issues if Continental Ave is closed as a result of the project.

Response: Continental Ave is not planned to be closed during the project. The only street to be closed will be Civic Center Drive east of the Civic Center to Texas Ave.

Comment: Northey Tretheway commented because of the unprecedented levels of public interest in, and concern about, the closing phases of cleanup activities leading toward the consent decree, he recommends that the plan include a section dedicated to formal public involvement strategies (beyond the formal design comment periods mentioned here). Such interactive strategies should emphasize the community's stake in determining the best end- uses of the entire corridor.

Response: NRDP plans to keep the public informed on the design. During the design process, NRDP will develop a post-removal grading plan in coordination with landowner BSB. BSB's will ultimately determine the end land use for its Parrot Project-related property. Areas that are not immediately developed will be revegetated to minimize erosion and stormwater runoff.

Attachment A – Categorical Breakdown of Comments

PH = Public Meeting comments

Category Number	Category Title	Letter Number
1	General Support of the Draft Restoration Plan Amendment	3, 6,9,12-14; PH7, PH8
2	General Opposition to the Draft Restoration Plan Amendment	1, 11, 15; PH6
3	Use of Remedy versus Restoration Funds	3, 4, 6, 7, 10, 12, 13; PH1, PH3, PH8
4	Disposal in the Berkeley Pit	1, 2, 3, 6, 9, 11, 12, 13, 14; PH5, PH6
5	ET Cover Systems	8, 13;PH2, PH3
6	Groundwater	13, 14; PH2
7	Waste Removal Comments	3,5,11, PH3,
8	Miscellaneous	1, 3, 5, 9, 11, 12, 13, 14, 14; PH3, PH3, PH4

Attachment B – Individual List of Public Comments Received

BAO Public Comments Received by NRDP	
1	Larry Winstel
2	Jim and Pat Scown
3	Fritz Daly
4	John Ray
5	John Ray
6	Colleen Elliott
7	John Ray
8	John Ray
9	Chris Gammons
10	John Ray
11	Tyler Pullman
12	Trout Unlimited/Bruce Farling
13	Richard Tretheway
14	Mary Kay Craig for Citizens for Labor and Environmental Justice
15	William Duffy for Patricia Gallery, Atlantic Richfield Company
January 14, 2016 Public Meeting Comments	
1	John Ray
2	Doug Coe
3	Dan O’Neill
4	Kellee Anderson
5	Cindy Perdue-Dolan
6	Larry Winstel
7	Carl Hafer
8	Chris Brick

Summary of BAO Criteria Evaluation for 2015 Small Project: “Letting Microbes Do the Cleanup: Arsenic Bioremediation of Butte Area Soils”	
Proposal Summary	The Montana State University Land Resources and Environmental Sciences has proposed conducting a research project to identify and isolate bacteria found in disturbed local soils, that will reduce arsenic into a less toxic/mobile form; then conduct a series of greenhouse and field trials to determine if the bacteria-inoculated soils produce greater plant growth. Total project costs are estimated at \$99,437 with sponsor requesting \$73,875 in BAO restoration funds and offering a match of \$25,562.
Evaluation Summary/Funding Recommendation	The phytotoxicity of Butte area soils is typically the result of a combination of contaminants of concern (elevated copper and zinc being common). Addressing just one contaminant, in this case arsenic, without addressing the other toxins that are likely present, would seem to be an incomplete solution in most instances. NRDP recommends that the BNRC does not fund this project.
Criteria Evaluation	
1. Technical Feasibility	<u>Uncertain Feasible</u> : The project sponsor proposes a scientifically sound approach to conducting this research project associated with reducing the toxicity and mobility of arsenic; however, it is well documented in the literature that arsenic does not act alone in inhibiting vegetation growth. Therefore, it is uncertain the goal of establishing vegetation by reducing arsenic toxicity can be achieved.
2. Costs:Benefits	<u>Net Costs</u> : Project costs likely outweigh its benefits as arsenic, is just one of many contaminants of concern in local soils that can cause phytotoxicity.
3. Cost-Effectiveness	<u>Potentially Cost Effective</u> : The less expensive greenhouse trial (\$18,995) is likely cost effective; however, the cost of the field trials (\$80,442) is less likely cost effective.
4. Results of Response Actions	<u>Consistent</u> : The project should not interfere or duplicate with remedy actions. Superfund remedy has called for removal and disposal of soils contaminated with arsenic that are determined to exceed the action levels (250 mg/kg residential, 500 mg/kg commercial, and 1,000 mg/kg recreational), so the project would have to focus on soils that will not be addressed under remedy. If so, this project could augment response actions.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : This project does not appear to present any significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>May Reduce the Recovery Period</u> : The research project itself will not reduce the recovery period for disturbed soils in the Butte area; however, if this approach is proven to reduce phytotoxicity of soils contaminated solely by arsenic and applied on disturbed areas that will not be addressed by remedy, then it could reduce the natural recovery period.
7. Human Health and Safety	<u>No Significant Adverse Impacts</u> : the project presents no potential significant adverse impact to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	The greenhouse portion of this research project would not be subject to Superfund laws/policies; however, the field study would have to be coordinated with Butte-Silver Bow, EPA, DEQ, and NRDP and would be subject to any applicable rules/policies.
9. Resources of Special Interest	<u>No Impact</u> : Project has no adverse impacts on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Blacktail Creek Corridor Trail Proposal”	
Proposal Summary	Project sponsor seeks \$30,000 in Butte Area One restoration funds to hire an engineering firm to design a public trail from Mount Highland Drive to Thompson Park. This would be Phase I of the project with Phase II being land acquisition and trail construction while Phase III would be transfer of ownership to Butte-Silver Bow who would maintain the trail. Thompson Park with Blacktail Creek running through it, offers walking/fishing opportunities that Silver Bow Creek in Butte Area One does not provide.
Evaluation Summary/Funding Recommendation	The proposed trail would offer a connection to an area that would offer similar recreational experiences as those along Silver Bow/Blacktail Creek through Butte Area One offered. NRDP believes it could cost twice as much to design the public trail as the sponsor has requested. At this time, there appears to be no funding in place to actually construct the trail or purchase the property. Butte’s trail system has several disconnected segments, like Father Sheehan Park to Skyline Park, and connecting those recreational areas would seem to be a higher priority and likely cost less to complete. <u>Recommendation:</u> NRDP recommends \$50,000 to fund the design of the Blacktail Creek Corridor Trail component if matching funds for acquisition and to construct this trail have been committed to the effort.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible:</u> project sponsor proposes following the appropriate steps for assessing alternatives and surveying/engineering/designing the proposed trail. Outcome would likely provide a buildable design that would accomplish the objective of providing a trail to Thompson Park where a replacement recreational experience could be experienced.
2. Costs:Benefits	<u>Uncertain:</u> Costs to construct a 10 foot wide public trail likely range from \$150,000 to \$300,000 per mile. Typical engineering costs for a construction project like this range from 10% to 12%. Using the lowest values: \$150,000/mile x 4 miles x 10% = \$60,000; which leads NRDP to conclude that the proposed trail would likely cost more to design than the sponsor has requested. If the trail could be designed for \$30,000 then the net project benefits would exceed the costs associated with the project.
3. Cost-Effectiveness	<u>Likely Cost Effective:</u> based on the information provided by the project sponsor’s alternatives analysis, NRDP concludes that most cost effective means to design the trail would be as the sponsor has proposed.
4. Results of Response Actions	<u>Consistent:</u> the project will not coordinate with a superfund response action, nor will it interfere with a response action.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts:</u> this planning project should not pose any significant adverse impacts to the environment. It should be expected that some short term impacts to the work area would occur during the construction phase of the project.
6. Recovery Period and Potential for Natural Recovery	<u>No Effect on Recovery Period:</u> this planning project would have no effect on the recovery of the injured natural resources of Butte Area One.
7. Human Health and Safety	<u>No Adverse Impacts:</u> this project should not have any adverse impacts to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	Project would be planning work outside of the superfund area and does not appear to be subject to Superfund laws/policies.
9. Resources of Special Interest	Project should have <u>no adverse impacts</u> on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Bonanza BMX Bike Park”

Proposal Summary	MSU School of Architecture has proposed restoring the largely unreclaimed, 8-acre Bonanza Mine Dump (BRES Site # 120/120 East) to prevent mine wastes from eroding and reaching Silver Bow Creek. End land use at the site calls for a sanctioned USA Bicycle Motocross Track, park/trailhead and snow storage area. Phase I of the project calls for a round of soil and water sampling to identify/quantify contaminated areas with Phase II calling for park/track construction. Total project costs are estimated at \$323,543 with a request of \$100,000 in Butte Area One restoration funds: \$73,317 for clean fill/labor; \$7,568 for seed/planting materials/labor; \$13,989 for trees/labor; and \$5,000 contingency. Potential match by various sponsors to provide for the balance of the project funding.
Evaluation Summary/Funding Recommendation	The Bonanza Mine site has basically served as an unauthorized bike park for neighborhood children for generations. To date the site has been largely unreclaimed under superfund; however, the site could potentially be addressed under the final BPSOU remedy. Any restoration work would have to coordinate with remedy; therefore, this recommendation is contingent upon the final BPSOU remedy decision.. It is important to recognize that NRDP’s evaluation of this project determined the BMX track and associated components (i.e., tramp resistant grasses adjacent to track) of this proposal do not meet the legal threshold for natural resource damage funding. The sponsor proposes to use other funding sources to construct the BMX and associated aspects of this project. NRDP recommends funding for the full request of \$73,317 for clean fill/topsoil/labor; \$7,568 for native seed/planting materials/labor; \$13,989 for native trees/labor; and \$5,000 for contingencies. Funding contingent upon sponsor and/or BSB will obtain the matching funds necessary to complete the non-restoration portions of the project before starting restoration work and the restoration actions are integrated and coordinated with any remedial actions.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible</u> : Project sponsor proposes sampling/analytical techniques to identify and quantify contamination, although the sponsor does not have a background in environmental sampling. Sponsor proposes working with Butte-Silver Bow, an experienced partner, to employ standard reclamation practices to cover the site. . Although the sponsor, MSU students, has not completed similar restoration projects, the project approach should lead to a reasonable expectation that the project can achieve the stated objectives.
2. Costs:Benefits	<u>Commensurate Benefits</u> : project benefits are essentially proportional to the costs anticipated for the project.
3. Cost-Effectiveness	<u>Likely Cost Effective</u> : the limited cost information and project implementation alternatives provided leads the state to conclude that the project will likely be cost effective.
4. Results of Response Actions	<u>Positive Coordination with contingency</u> : the project actions will address an area that superfund reclamation has not addressed. End result of the project should effectively isolate mine wastes remaining on the site and prevent their transport downhill to Silver Bow Creek.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : this project does not appear to present any significant adverse impacts to the environment. It should be expected that some short term impacts to the work area will occur during the construction phase of the project and would need to be mitigated by the project sponsor.
6. Recovery Period and Potential for Natural Recovery	<u>Reduces the Recovery Period</u> : project should enhance the recovery of the site which has seen minimal reclamation and minimal recovery of this highly disturbed area.
7. Human Health and Safety	<u>No Significant Adverse Impacts</u> : the project presents no potential significant adverse impact to human health and safety. Project should make the area safer for recreation.
8. Federal, State, and Tribal Policies, Rules, and Laws	<u>Insufficient</u> : project sponsor has not identified the permits and measures that will be required to comply with federal, state, and local policies, rules and laws that will be required before, during and after the implementation of the project. Project Sponsor would need to comply with federal, state, and local policies
9.Resources of Special Interest	<u>No Impact</u> : project has no adverse impacts on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Design of a Subsurface Bioreactor System to Treat Grove Gulch Nitrates/ Heavy Metals”	
Proposal Summary	Project sponsor seeks \$19,832 in Butte Area One restoration funds to conduct an assessment of the heavy metals and nitrates in Grove Gulch storm water and complete a survey and 30% design for a passive bioreactor to treat a portion of the water. Sponsor proposes an in-kind salary match of \$3,646.
Evaluation Summary/Funding Recommendation	Characterization of the Grove Gulch watershed has not been thoroughly investigated as part of the BPSOU. Investigations conducted by MBMG on behalf of the BNRC/NRDP indicate Grove Gulch is a source of heavy metal contamination to Blacktail Creek and there were known sources of metal laden tailings deposited on the Grove Gulch floodplain. Currently no further investigations are being planned for Grove Gulch. A feasibility study to determine the most appropriate actions for this site such as source removal / channel realignment would be the best method to determine the best means of improving water quality for this stream, especially since there are limited BAO restoration funds. Therefore, NRDP does not recommend funding the design of the Grove Gulch bioreactor for \$19,832 as proposed by the sponsor.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible</u> : Project sponsor proposes a 30% design of a bioreactor, an accepted technology for the passive treatment of nitrates and metals in water; therefore, it is reasonably likely that the sponsor will achieve the stated objectives. However, do to the uncertainty that a full scale bioreactor is a technically feasible or cost effective treatment option a fully funded project would be considered “uncertain feasibility”.
2. Costs:Benefits	<u>Net Benefits</u> : Project benefits would outweigh project costs. Very little characterization of Grove Gulch has been conducted and the sponsor proposes a more frugal approach for quantifying the water quality of the stream and developing a 30% design of a passive system to help improve the water quality of the stream. The full scale cost benefits are considered uncertain because cost of construction and long-term O&M are unknown.
3. Cost-Effectiveness	<u>Likely Cost Effective</u> : Based on the limited information provided by the project sponsor, it is reasonable to conclude that the selected alternative is likely to be cost effective.
4. Results of Response Actions	<u>Consistent</u> : At this point, little to no superfund response action is known for Grove Gulch; therefore this effort would likely not interfere with a response action.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : This planning project should not pose any significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>No Effect on Recovery Period</u> : This planning project would have no effect on the recovery of the injured natural resources of Butte Area One.
7. Human Health and Safety	<u>No Adverse Impacts</u> : This project should not have any adverse impacts to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	Project would be planning work outside of the superfund area and does not appear to be subject to Superfund laws/policies.
9. Resources of Special Interest	Project should have <u>no adverse impacts</u> on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “A GIS Model to Guide Revegetation Efforts In Butte”	
Proposal Summary	Project sponsor seeks \$2,000 in Butte Area One restoration monies to develop a GIS model to map the ecological conditions/plant communities of uninjured reference sites in Butte and the surrounding areas. Then the characteristics of the BRES sites targeted for restoration would be loaded in the model and plants from similar reference sites would be selected for planting at the BRES site.
Evaluation Summary/Funding Recommendation	NRDP believes the proposed GIS model will prove to be a valuable tool to guide Butte Hill revegetation projects and should increase the potential for improved success for the Montana Tech Native Plant Program, as well as the Butte-Silver Bow multi-year Tree Planting project. On consideration that might need consideration is the fact that most BRES sites are capped with imported topsoil, which is likely different from the top soils in the uninjured reference sites. NRDP recommends funding for \$4,000. Given the relatively low price tag of this request, the project could be directly funded under a task order or similar financial agreement.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible</u> : project sponsor proposes to use established computer software to direct field planting efforts. NRDP has reasonable confidence in the sponsor’s ingenuity and the software’s capability; therefore, the potential for a successful outcome seem apparent.
2. Costs:Benefits	<u>High Net Benefits</u> : projects potential benefits should easily exceed the costs associated with the project.
3. Cost-Effectiveness	<u>Cost Effective</u> : the low initial cost of this project and the potential for the refinement and reuse of the model seems to be a monumental advancement over current “random” or best guess method of species selection or the one-mix-fits-all approach.
4. Results of Response Actions	<u>Positive Coordination</u> : the GIS tool could be used to help direct future remedial and restoration revegetation projects; therefore, it should augment the results of effective superfund actions.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : this project should not present any significant adverse impacts to the environment if the resulting model is applied appropriately.
6. Recovery Period and Potential for Natural Recovery	<u>Reduces the Recovery Period</u> : the model should guide the selection of appropriate plant/tree species for each restoration site so that its plant communities will closely match those of similar uninjured areas. Putting the plants in areas where they are known to thrive should reduce the recovery period.
7. Human Health and Safety	<u>No Adverse Impacts</u> : this project should not have any adverse impacts to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	<u>Consistent</u> : Project appears to be consistent with the Butte Area One Restoration Plan and the ARARs referenced in the BPSOU ROD which call for selecting a mix of native plants/grasses to be planted on reclaimed areas.
9. Resources of Special Interest	Project should have <u>no adverse impacts</u> on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Microbial Activity in Local Metal-Contaminated Sediments and Waters: Fostering Community Education Through Data Integration and Communication”	
Proposal Summary	The Montana Tech Department of Chemistry and Geochemistry has proposed conducting a research project to identify the structure, diversity and activities of microbes that exist at five locations in Butte Area One waters and sediments then integrating that information with corresponding geochemical data in an effort to ascertain the health of the ecosystem at four different points of time, including storm season when water quality parameters often exceed the acute aquatic life standards for metals. Results of the findings would be shared with the public in the form of an article for the general public and an illustrated children’s book. Total project costs are estimated at \$77,225 with an in-kind salary match of \$37,188.
Evaluation Summary/Funding Recommendation	Microbial information is not a typical parameter measured for the superfund activities in Butte Area One. Silver Bow Creek and Blacktail Creek are monitored for water quality and macro-invertebrate communities. There is the potential the information from this study could lead to a better understanding of the effects of storm water/seasonal changes on the life in the stream. Uncertainty of the results from this study will exist since the sponsor has not collected microbial information from streams and proposed to compare the results to streams from outside this region. The \$10,800 children’s book seems to overlap with the role of the Clark Fork Watershed Education Program. Targeting the general public for a \$10,800 article without establishing a desire for such a publication seems unwarranted. NRDP does not recommend this project for funding due to its uncertainty.
Criteria Evaluation	
1. Technical Feasibility	<u>Uncertain Feasible</u> : Since ecosystem data of this type does not exist for Butte Area One streams, there are uncertainties associated with the outcome of this project.
2. Costs:Benefits	<u>Low</u> : Given that no microbial data exists for the streams, the relationship of expected costs to expected benefits would be low.
3. Cost-Effectiveness	<u>Potentially Cost Effective</u> : With the many unknowns associated with the project, the State cannot determine if the project is likely to be cost effective.
4. Results of Response Actions	<u>Consistent</u> : The project should not interfere with remedy actions. Study results could help quantify the effectiveness of surface water/storm water portions of BPSOU remedy. Information from the study would be made readily available to the interested parties.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : This project does not appear to present any significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>No Effect on the Recovery Period</u> : Project most likely will not change the time frame for eco system recovery for the study area.
7. Human Health and Safety	<u>No Significant Adverse Impacts</u> : The project presents no potential significant adverse impact to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	Project focuses on research and public education and does not appear to be subject to Superfund laws/policies.
9. Resources of Special Interest	<u>No Impact</u> : project has no adverse impacts on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Moss Revegetation, A Process to Initiate Restoration and Repair of Natural Resources Damaged by Mining that Impact Butte Area One”	
Proposal Summary	A Montana Tech Researcher has proposed identifying native moss species growing in mine waste areas, then propagating them in a greenhouse and redistributing them in four impacted areas within BPSOU. Sponsor will apply a variety of soil amendments to improve growth rates and determine which ones work best. Primary goal of the study is to develop an easily replicated method to revegetate mine impacted areas not targeted for remediation or restoration. Sponsor requests \$48,979 in BAO restoration funds and offers an in-kind salary match of \$35,289.
Evaluation Summary/Funding Recommendation	The BPSOU remedy of the mine waste areas was based on the human health standards for lead and arsenic, yet the most common ores found on the un-vegetated mine impacted areas contain copper and zinc at levels that inhibit vegetation and for which there are no action levels triggering clean-up. Therefore there are numerous barren sites within and surrounding the operable unit that have not been reclaimed and are prone to erosion and sediments can easily be transported to surface waters, which often exceed the acute aquatic life standards for copper and zinc. This study could identify a low cost means of addressing the problem. NRDP recommends funding the project for the entire request of \$48,979.
Criteria Evaluation	
1. Technical Feasibility	<u>Potentially Feasible</u> : Sponsor cites literature documenting the mosses can grow in metal contaminated soils and uptake the metals for the soil. Therefore it seems likely that the objectives of the project can be achieved by following the scientifically based methods as proposed by the sponsor.
2. Costs:Benefits	<u>Commensurate Benefits</u> : The project’s benefits are generally proportional to the project costs.
3. Cost-Effectiveness	<u>Likely Cost Effective</u> : Sponsor has proposed a logical procedure for collecting, propagating and growing mosses on unreclaimed areas and performing trials to determine the best method of application based on previous research.
4. Results of Response Actions	<u>Consistent</u> : The project should not interfere or duplicate any remedy actions. Study results could help quantify the effectiveness of covering unreclaimed areas with moss and preventing sediment transport to surface waters.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : This project does not appear to present any significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>Reduces the Recovery Period</u> : Sponsor cites literature that moss tends to be a pioneer species, leading the way for eco-system recovery in disturbed areas. If that hypothesis proves correct than this project could accelerate the recovery of unreclaimed areas affected by mining/milling.
7. Human Health and Safety	<u>No Significant Adverse Impacts</u> : The project presents no potential significant adverse impact to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	Project locations are reclaimed/unreclaimed BRES sites: project sponsor would have to communicate and coordinate with EPA/DEQ/BSB prior to, during, and after the project implementation to assure that the remedy is not compromised.
9. Resources of Special Interest	<u>No Impact</u> : Project has no adverse impacts on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “The Eye/Land Institute: Restoration Education and Site-Specific Installation at the Intersection of Art & Environmental Research”	
Proposal Summary	Sponsor proposes to use the Northside Tailings area as a focus site to engage and educate the public in the Butte Area One restoration process through the production of original works of art and educational outreach materials targeted for non-technical members of the public. A team of environmental researchers and artists intend to activate the site over a two-year period as a place of restoration education using field-tested techniques to blend science and art to demonstrate creative restoration methods. Sponsor requests \$30,000 in BAO restoration funds to cover \$24,000 in salaries and \$6,000 for materials and supplies while offering in-kind donations of testing equipment, tools, materials and rental space valued at \$15,000.
Evaluation Summary/Funding Recommendation	NRDP has made substantial efforts and invested considerable restoration monies into educating the public about the natural resource damage lawsuits, settlements, and restoration actions;. This project proposes to reach and engage neighbors of the Northside Tailings area. Using public funds to inform the non-technical members of the public about the natural resources, and the injuries and efforts to restore them, seems appropriate, however, NRDP is concerned that this project not lose its nexus with its educational purpose. NRDP recommends funding the project for the full request of \$30,000 with the funding condition that project sponsors coordinate with CFWEP to ensure there is no overlap in activities, and that the project activity effectively reaches out to the BAO community, not just the Northside Tailings neighbors, and focuses on educating through art.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible</u> : The project sponsor offers an innovative approach at engaging and educating the non-technical members of the community so it seems reasonable to expect that the project goals will be achieved with the funding condition. The project proposed team includes an environmental scientist and artist, but the lack of an educational expert creates uncertainty as to how the public will be effectively educated through this project.
2. Costs:Benefits	<u>Commensurate Benefits and Costs</u> : Although it will be challenging to measure, the projects potential benefits seem equivalent with the cost of the project if the entire BAO community is targeted.
3. Cost-Effectiveness	<u>Likely Cost Effective</u> : This unique alternative appears to have costs similar to conventional educational methods; therefore, it is likely a cost effective approach.
4. Results of Response Actions	<u>Positive Coordination</u> : Much has been done by the state to educate the community about the injury to and restoration of the natural resources of Butte Area One, and this project should augment those efforts.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts</u> : This project should not present any significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>No Effect on Recovery Period</u> : This project will not reduce the recovery period of the injured natural resources.
7. Human Health and Safety	<u>No Adverse Impacts</u> : Sponsor will collect samples from the proposed project area to determine if the contamination poses a threat to human health and will take appropriate precautions to protect workers/public.
8. Federal, State, and Tribal Policies, Rules, and Laws	<u>Consistent</u> : Project location is in an area the remedy is not expected to be addressed as contaminant levels were found to be lower than response action levels, but superfund policies, rules, and laws would apply. Applicant will have to make formal arrangements with Butte-Silver Bow to obtain access to this county-owned property, and coordinate with EPA/DEQ.
9. Resources of Special Interest	Project should have <u>no adverse impacts</u> on these special sites/resources.

Summary of BAO Criteria Evaluation for 2015 Small Project: “Restoration of Silver Bow Creek Water Quality in Butte Area One by Restoring Tree Growth in the Butte Priority Soils Operable Unit Boundary”

Proposal Summary	Construct a greenhouse in the Underground Mine Education Center on the Montana Tech campus and grow 4,000 seedling trees (from seeds collected locally from native trees) per year for four years and plant them in unreclaimed areas within the Butte Priority Soils Operable Unit in order to prevent erosion and protect water quality in Silver Bow Creek. Sponsor’s hypothesis is that trees from native stock will grow in disturbed soils and survive without irrigation. Total BAO funds requested are \$80,000 with a match of \$86,098 in salaries/benefits proposed.
Evaluation Summary/Funding Recommendation	If viewed purely as a “revegetation project” which supplies 16,000 seedling trees at a cost of nearly \$80,000 to the BAO restoration fund, it seems a rather poor investment as the same number of trees could be purchased at less than 1/2 the cost from the DNRC nursery. Past BSB tree planting areas have been amended with compost, which contains a mixture of sewer sludge and compost from the landfill, so it seems that little new information would be derived from that portion of the sponsor’s proposal. However, determining if tree seedlings from local stock grow/survive better than nursery stock could prove to have long term advantages. NRDP would recommend sponsor coordinate with the Montana Tech Native Plant Program to devise and conduct that research. <u>Recommendation:</u> Fund research project for \$20,000, the cost of purchasing 16,000 trees from the DNRC nursery, with two funding contingencies: the local stock hypotheses quantified in a research paper presented to the BNRC/NRDP, and coordination with the Montana Tech Native Plant Program to devise and conduct that research.
Criteria Evaluation	
1. Technical Feasibility	<u>Reasonably Feasible:</u> Given that the project looks to replicate a successful endeavor undertaken by the Anaconda Company 40 years ago, the underground greenhouse would seem viable. Sponsor proposes collecting seed from local stock that is likely more tolerant to the local climate/environmental conditions, then raising the seed in mine wastes from local sites (sounds logical but is not proven) and then transplanting the seedlings into mine wastes—this aspect of the proposal is likely to produce uncertain results (likely high mortality for trees planted directly in mine waste), which would render this proposal more of a research project than a revegetation project. Sponsor also proposes evaluating the benefits of amending soils with sewer sludge.
2. Costs:Benefits	<u>High Net Costs:</u> Total estimated project cost = \$166,098 with \$80,000 proposed from restoration funds. Project would produce an estimated 4,000 seedling trees per year for four years so 16,000 trees; costing the restoration fund \$5.00 each. Seedling trees from the Montana Department of Natural Resources and Conservation Nursery in Missoula would cost (from DNRC website: \$0.94 to \$1.55 each) less than \$20,000.
3. Cost-Effectiveness	<u>Not Likely Cost Effective:</u> It is likely that a suitable alternative, like planting nursery stock at a fraction of the cost, would produce the same or similar results, but at a much lower cost to the restoration program.
4. Results of Response Actions	<u>Inconsistent but Potentially Beneficial:</u> Billed as a “stand-alone” project, this effort would overlap with the BSB Bow Tree Planting project and the Montana Tech Native Plant project, but it would likely augment those actions. Project location is a reclaimed BRES site: project sponsor would have to communicate and coordinate with EPA/DEQ/BSB prior to, during, and after the project implementation to assure that the remedy is not compromised.
5. Adverse Environmental Impacts	<u>No Significant Adverse Impacts:</u> This project appears to present no significant adverse impacts to the environment.
6. Recovery Period and Potential for Natural Recovery	<u>Reduces the Recovery Period:</u> Proposal could accelerate the recovery period and add more species diversity to the Butte Hill. However, the true ecological baseline of the Butte Hill is uncertain, and there may currently be as many trees on the Hill as there were prior to the injuries caused by mining.
7. Human Health and Safety	<u>No Significant Adverse Impacts:</u> the project presents no significant adverse impact to human health and safety.
8. Federal, State, and Tribal Policies, Rules, and Laws	Project location is a reclaimed BRES site: project sponsor would have to communicate and coordinate with EPA/DEQ/BSB prior to, during, and after the project implementation to assure that the remedy is not compromised.
9. Resources of Spec. Interest	Project has <u>no adverse impacts</u> on these special sites/resources.



TO: UCFRB Advisory Council Members, Public

CC: NRDP Staff

FROM: Doug Martin

DATE: February 12, 2016

SUBJECT: *UCFRB Aquatic and Terrestrial Resources Restoration Plans*, Revision Schedule and Process for SSTOU/SBC Excess Remediation Funds

Purpose and Background

The *Final Upper Clark Fork River Basin Interim Restoration Process Plan, 2012 (Process Plan)* sets forth the process for development of the resource-specific restoration plans that dictate the expenditures of UCFRB Restoration Fund in the future. The *Process Plan* requires a revision to the *UCFRB Aquatic and Terrestrial Resources Restoration Plans (Restoration Plans)* for the allocation of Streamside Tailings Operable Unit (SSTOU) excess funds once the Department of Environmental Quality (DEQ) has completed the major remediation construction activities.¹

In November 2015, DEQ determined that a transfer of \$16.5 million in excess from the SSTOU/SBC Remediation Fund was available for transfer into the UCFRB Restoration Fund. DEQ's determination was approved by EPA in January 2016.²

The *Process Plan*, Section 7.3 states:

SSTOU/SBC Excess Funds Reserve

Consistent with the Long Range Guidance Plan, should there be any unexpended money in the SSTOU/SBC Remediation Fund, that excess will be transferred to the general UCFRB Restoration Fund and allocated to a reserve fund for specific projects to be determined based on the overall status of the restoration of resources and services within the Upper Clark Fork River drainage at and above Deer Lodge, with the Cottonwood Creek drainage being the northern boundary, including the Silver Bow Creek and Warm Springs Creek drainages. Future

¹ SST OU Consent Decree paragraph 15.e states, "Any funds, including Earnings, in the SST OU Account which the United States and the State determine, pursuant to the [Site Specific Memorandum of Agreement], are not required for Future Response Costs and implementation of any modification of the ROD incurred by EPA or the State (including reasonable estimates for O&M) for the SST OU shall be transferred to the State's Upper Clark Fork River Basin Restoration Fund, established pursuant to paragraph 16 of the State CD."

² See attached letters.

distribution from this reserve of restoration funds should be designated for additional unfunded restoration of aquatic and terrestrial resources in these upstream areas, keeping in mind the allocation priorities set forth in the Long Range Guidance Plan and, particularly, the Aquatic and Terrestrial Prioritization Plans, and the recognition that the UCFRB areas at and upstream of Deer Lodge are the most severely injured.

The Montana Department of Environmental Quality (DEQ), which is leading the Silver Bow Creek remediation effort, anticipates that major remediation construction activities will be completed by 2014. Following that, the State will determine what unexpended money would be available for transfer to the UCFRB Restoration Fund, after taking into consideration the funds needed for future remediation operation and maintenance and monitoring needs. Pursuant to the 1999 Consent Decree for the Streamside Tailings Operable Unit, which provides for Silver Bow Creek remediation, the State's determination of what amount can be transferred to the UCFRB Restoration Fund is subject of approval by the U.S. Environmental Protection Agency.

The State will defer developing a restoration plan specific to the expenditure of these excess remediation funds until the amount to be transferred to the UCFRB Restoration Fund is known. This future plan would be subject of the standard restoration planning review and approval process specified in Section 2. The reimbursement provisions in the Long Range Guidance Plan for the Silver Bow Creek Greenway project described in Section 7.1 above would take first priority over any other expenditure of these excess remediation funds. The transfer of the excess amount to the UCFRB Restoration Fund would also trigger an associated update/revision to the Aquatic and Terrestrial Restoration Plans.

Review and Approval Processes and Public Participation

Similar to the *2012 Restoration Plans* and the *2015 Update*, the *SSTOU/SBC Excess Remediation Funds Revision* will be developed pursuant to the *Process Plan*, and be subject to the review and approval steps described in the *Process Plan*. The *SSTOU/SBC Excess Remediation Funds* revision will be subject of a public comment period of at least 30 days and consideration by the Advisory Council and the Trustee Restoration Council (TRC). Following consideration of public input and the recommendations of these two councils, the Governor will make the final decision on the *SSTOU/SBC Excess Remediation Funds Revision*.

This review and approval process provides multiple opportunities for meaningful public participation. The public has the opportunity to provide public comments on the draft revision during the designated comment period, and also at the meetings of the Advisory Council and TRC at which this revision is considered. Input from the Advisory Council also serves as an avenue of public input.

Schedule for Revision to the Restoration Plans to Allocate the SSTOU/SBC Excess Remediation Funds

The *SSTOU/SBC Excess Remediation Funds Revision* is subject to a 30-day public comment period for the *SSTOU/SBC Excess Remediation Funds Revision* scheduled for February 12 through March 14, 2016. The Advisory Council and TRC will consider public comment and make recommendations to the Governor on proposed final revision in April 2016 with a decision by the Governor to follow. [Note: dates subject to change.]

UCFRB Restoration Plans Revision for SSTOU/SBC Excess Remediation Funds – Allocation of \$16.5 million

1. Silver Bow Creek Greenway Project \$8 Million Set-Aside

Consistent with Section 7.1 of the Process Plan (Silver Bow Creek Greenway Project) referenced in Section 7.3 above, the State proposes that \$8.0 million of the \$16.5 million be used to reimburse the Aquatic and Terrestrial Resources funds for the Silver Bow Creek Greenway project \$8.0 million set-aside. The Process Plan states that 60% (or \$4.8 million) of the unexpended money from the SSTOU/SBC Remediation Fund reimburse the Aquatic Fund and 40% (3.2 million) reimburse the Terrestrial Fund. The State proposes that these funds be placed in Aquatic and Terrestrial Resources Reserve Funds to be allocated to aquatic and terrestrial resources during the next Restoration Plans revision scheduled to commence in 2018.

2. Parrot Tailings Waste Removal Reserve - Remaining \$8.5 Million

The State proposes to place the remaining \$8.5 million in a special reserve account to fund a portion of the Butte Area One Restoration Plan Amendment – Parrot Tailings Waste Removal, issued in draft in December 2015, for removal of tailings along Silver Bow Creek associated with the former Parrot Smelter, should the amendment be approved by the Governor³. The \$8.5 million would be expended on a pro rata basis with the first \$8.5 million allocated in the 2012 Butte Area One Final Restoration Plan (BAO Plan) for restoration of Upper Silver Bow Creek.

A major component of the BAO Plan is restoration of the Upper Silver Bow Creek corridor, which is above the confluence with Blacktail Creek and includes the Parrot Tailings waste removal area. The BAO Plan calls for removal of mine wastes left in place along the floodplain of Upper Silver Bow Creek through Butte Area One. The BAO Plan identifies these wastes, which include the Parrot Tailings, Diggings East, Northside Tailings, and other isolated areas of mine wastes in the Blacktail and Upper Silver Bow Creek floodplains, as the primary sources supplying inorganic contaminants to the alluvial groundwater, surface water, and in-stream sediment resources within the Upper Silver Bow Creek corridor. However, an estimated \$26-34 million of the Upper Silver Bow Creek work remains unfunded.⁴

³ <https://dojmt.gov/lands/butte-area-one/>

⁴ The BAO Plan estimated \$30 million for restoration activities in the Upper Silver Bow Creek corridor. The more recent Preliminary Conceptual Restoration Plan for Butte Area One (February 2015) estimated the Upper Silver Bow Creek work at \$36.3 - \$44 million. The BAO Plan allocated \$10 million to those activities, and requested a match from other sources to complete the project. The State believes that a significant portion of the Upper Silver Bow Creek corridor work is a responsibility of remedy, and expects a remedy funding contribution as part of any upcoming Butte Priority Soils Operable Unit consent decree. The State retains and reserves all rights and authorities, including, but not limited to, those related to the BPSOU Record of Decision and BPSOU potentially responsible parties. This includes, but is not limited to, the groundwater and surface water components of the BPSOU Record of Decision remedy.

The Parrot Tailings project meets the criterion set forth in Section 7.3 of the Process Plan for the use of the SSTOU/SBC Remediation Excess fund for, “specific projects to be determined based on the overall status of the restoration of resources and services within the Upper Clark Fork River drainage at and above Deer Lodge, with the Cottonwood Creek drainage being the northern boundary, including the Silver Bow Creek and Warm Springs Creek drainages.” The Parrot Tailings area is located within the Silver Bow Creek drainage, and the resources and services provided remain affected.

The Parrot Tailings project would also meet the criterion established for the SSTOU/SBC Remediation Excess funds that, “Future distribution from this reserve of restoration funds should be designated for additional unfunded restoration of aquatic and terrestrial resources in these upstream areas, keeping in mind the allocation priorities set forth in the Long Range Guidance Plan and, particularly, the Aquatic and Terrestrial Prioritization Plans, and the recognition that the UCFRB areas at and upstream of Deer Lodge are the most severely injured.” The Parrot Tailings project will help the State meet the goals of both the Restoration Plans and the BAO Plan by improving water quality, streambed sediments, and the ultimately the fishery of Silver Bow Creek.



Kristine Edwards
 US EPA
 Region VIII, Montana Office
 10 West 15th St., Suite 3200
 Federal Building
 Helena, Montana 59626

November 30, 2015

Re: Streamside Tailings Operable Unit Remedy Implementation and Costs

Dear Ms. Edwards:

The Montana Department of Environmental Quality (DEQ), in cooperation with the Environmental Protection Agency (EPA), has recently completed most major construction activities for the remedy of the Streamside Tailings Operable Unit. We just opened the bids on the sub-area 1 construction contract, with sub-area 2 construction planned, are now in a good position to estimate the remaining costs for the project. During the next two years, as the final remnant area removals are being completed, we anticipate completing the additional steps to fully transition into Operation and Maintenance (O&M).

DEQ has recently completed development of an O&M plan, the January 2015 Site Inspection Monitoring and Maintenance Plan, as well as the September 2015 Interim Performance Standards Assessment, which have been provided to EPA. Additional items that DEQ is continuing to work on include development and implementation of institutional controls and construction completion reporting documentation, which will require a final walk-through with EPA. We anticipate scheduling that final walk through in the spring of 2016.

With significant heavy construction activities completed, the State undertook a review of anticipated future work scope and estimated the costs associated with those actions. For SFY-2016 planned work is estimated at \$5,602,000. In the near-term, maintenance items, such as remnant tailings removal, road removal, DEQ and EPA management costs, routine monitoring and maintenance, potential revegetation activities and other potential as-yet-unidentified maintenance items, as well as costs for the institutional controls and addressing anticipated five-year review recommendations, have been estimated for DEQ budget development support for State Fiscal Years (SFY) 2017 through 2021. This timeframe represents years one through five of a thirty-year O&M program. Estimated budgets for O&M years 6 through 15 and years 16 through 30 have also been completed.

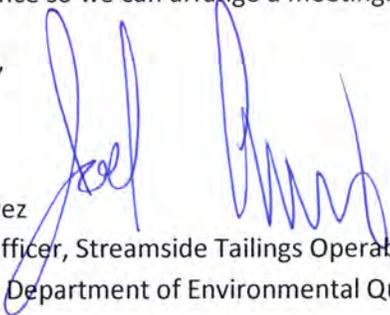
Timing	Gross Estimated Budget (@3% discount rate)
Present Values of Years 1-5 Future Costs	\$ 11,017,735
Present Values of Years 5-15 Future Costs	\$ 7,674,632
Present Values of Years 16-30 Future Costs	\$ 3,884,891
Total Estimated Costs (@ 3% discount rate)	\$ 22,577,258

Costs for management, administration, monitoring, sampling, reporting, and weed control are considered predictable for the budget estimating processes. These costs will span the thirty years of activities anticipated, and include an assumption that costs should decrease over time. Those reductions are reflected in project years 16 to 30. Other, less certain costs have also been included and are based on our overall work history with clean up actions in the basin, experience with repairs and maintenance in the riparian environment and published references. We do assume these less certain costs will also reduce over time and those reductions are also shown in years 16 to 30. Due to the inherent uncertainty of a 30 year budget estimate a contingency amount is embedded in the estimates.

In summary, the projected cost of the final remedial actions and O&M, if fully expended, is presently estimated to not exceed approximately \$22.5 million, based on a 3% discount rate. Accordingly, DEQ has determined that there is an excess of \$16.5 million available in the SSTOU Fund for transfer to the State's Upper Clark Fork River Basin Restoration Fund in accordance with Paragraph 15.e of the Streamside Tailings Operable Unit Consent Decree and the last paragraph of Section 25 of the November 1998 Site-Specific Superfund Memorandum of Agreement (SMOA) between our two agencies for the Streamside Tailings Operable Unit. As provided in the Consent Decree and SMOA, the transfer of such excess funds to the Restoration Fund requires EPA approval.

DEQ would like to meet with EPA by December 10th to present and discuss our estimates and answer any questions regarding the scope and predicted costs of the State's final actions and near and long term O&M obligation to maintain and protect the remedy of the Operable Unit. Our goal is to transfer the funds by end of the calendar year to support other planned work. Please call me (444-6407) at your convenience so we can arrange a meeting.

Sincerely,


Joel Chavez
Project Officer, Streamside Tailings Operable Unit
Montana Department of Environmental Quality

cc: Joe Vranka, EPA
Henry Elsen, EPA
Thomas Stoops, DEQ 
Jenny Chambers, DEQ
Bill Kirley, DEQ
File



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
Denver, CO 80202-1129
Phone 800-227-8917
www.epa.gov/region08

Ref: 8EPR

JAN 29 2016

Jenny Chambers, Director
State of Montana
Department of Environmental Quality, Remediation Division
1225 Cedar Street
P.O. Box 200901
Helena, MT 59620-0901

Re: Excess Fund Declaration for the Streamside Tailings operable unit remediation fund

Dear Ms. Chambers:

The U.S. Environmental Protection Agency (EPA) has reviewed the November 30, 2015 letter from Mr. Joel Chavez of the Montana Department of Environmental Quality (MDEQ) to Kris Edwards of EPA regarding the Streamside Tailings operable unit remediation fund (SST OU Remediation Fund). EPA agrees that there is a sufficient basis to declare an excess of funds in the SST OU Fund, such that \$16.5 million may be transferred by the State from the SST OU Remediation Fund to the Upper Clark Fork Basin Restoration Fund. This release would be appropriate under subparagraph 15.e. of the Streamside Tailings Operable Unit and Federal and State Natural Resource Damage Consent Decree, and paragraph 25 of the SST OU Site-Specific Memorandum of Agreement.

EPA's understanding is that some of this money may be used by the State natural resource damage program for the removal of the Parrot Tailings within the Butte Priority Soils operable unit, using the State's CERCLA and CECRA natural resource damage authority, if appropriate consultation and approval is obtained. EPA is supportive of this effort, and looks forward to working cooperatively with MDEQ and the Montana Natural Resource Damage Program on the timely implementation of that project.

Sincerely,

A handwritten signature in black ink that reads "Martin Hestmark".

Martin Hestmark, Assistant Region Administrator
Ecosystems Protection and Remediation



Printed on Recycled Paper

cc: Shaun McGrath, EPA
Deb Thomas, EPA
Joe Vranka, EPA
Henry Elsen, EPA
Kris Edwards, EPA
Nikia Greene, EPA
Jim Freeman, US DOJ
Tom Livers, MDEQ
Jenny Chambers, MDEQ
Tom Stoops, MDEQ
Joel Chavez, MDEQ
Daryl Reed, MDEQ
Bill Kirley, MDEQ
Jon Morgan, MDEQ
Harley Harris, NRDP
Mary Capdeville, NRDP
Jim Ford, NRDP
Pat Cunneen, NRDP



**Draft Response to Public Comments
on the SSTOU/SBC Excess
Remediation Funds Revision to the
UCFRB Aquatic and Terrestrial
Resources Restoration Plans**

**PREPARED BY:
STATE OF MONTANA
NATURAL RESOURCE DAMAGE PROGRAM
1720 9TH AVENUE
P. O. BOX 201425
Helena, MT 59620-1425**

May 2016

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Section I. Introduction

On February 12, 2016, the Natural Resource Damage Program (NRDP) released the SSTOU/SBC (Streamside Tailings Operable Unit/Silver Bow Creek) Excess Remediation Funds Revision (Revision) for the Upper Clark Fork River Basin Aquatic and Terrestrial Resources Restoration Plans (Restoration Plans) for public comment. The public comment period for the draft Revision ran February 12 through March 14, 2016. The NRDP sent notices of this opportunity to 346 individual/entities on its mailing lists, issued a press release, and placed display ads in four basin-area newspapers. The NRDP also presented this draft Revision at the February 17, 2016 meeting of the Upper Clark Fork River Basin Remediation and Restoration Advisory Council (Advisory Council).

The NRDP received a total of nine letters during the public comment period: two comments supporting the draft Revision, one letter from the Save Our Creek Coalition, four letters supporting the Save Our Creek letter, one letter proposing the SSTOU/SBC Excess Remediation Funds be held in reserve until more detail of the Butte Area One (BAO) remedy is known, and two letters which were beyond the scope of this public comment period. See Appendix 1 for a list of commenters, identified by a specific number that serves as a reference to the comment throughout this document. Appendix 1 also provides copies of the comment letters, which are also available on the NRDP website at: <https://doj.mt.gov/lands/ucfrb-restoration-plans/>. This draft document further summarizes the comments received and provides NRDP's responses.

The NRDP's draft Response to Public Comments on the SSTOU/SBC Excess Remediation Funds Revision to the Restoration Plans will be presented at a meeting of the Advisory Council on May 17, 2016 at 1:00 p.m. at the Butte Archives and the Trustee Restoration Council on June 6, 2016 at 2:00 p.m. in Room 172 at the State Capitol building. Both councils will consider the proposed Revision to the Restoration Plans. Following consideration of the recommendations of these two councils, the Governor will make the final decision on the SSTOU/SBC Excess Remediation Funds Revision.

Section II. Comment Summary and Response by Comments

Category 1: Letters of Support for Proposed Revision; Letters 2 and 6:

Comment: Two letters indicate support for the NRDP draft Revision allocation of the \$16.5 million of the SSTOU/SBC Remediation Excess funds of \$8.0 million to reimburse the Aquatic and Terrestrial Resources funds for the Silver Bow Creek Greenway set-aside and \$8.5 million towards the Parrot Tailings Waste Project (Parrot Project).

Response: The State acknowledges these comments and appreciates the support for the draft Revision.

Category 2: Letters Supporting Restore Our Creek Coalition; Letters 1, 4, 5, 6:

One letter from the Restore Our Creek Coalition and three letters supporting it were received.

Comment 1: The Restore Our Creek Coalition letter requests that NRDP commit the SSTOU/SBC Excess Remediation Funds “to restoring our creek to its fullest and most productive potential as a clean and functional waterway running through the heart of our community...”

Response: The SSTOU/SBC Excess Remediation Funds allocation would be for implementation of the Parrot Project as set forth in the draft amendment to the 2012 Butte Area One Final Restoration Plan (BAO Plan). The excavation associated with the Parrot Project will not extend into the Silver Bow Creek channel, and does not impact existing remedy features. Through the removal of contamination, the Parrot Project will help the State meet the goals of both the Restoration Plans and the BAO Plan by improving water quality, streambed sediments, and, ultimately, the fishery of Silver Bow Creek.

Comment 2: The Restore Our Creek Coalition letter views this funding as a good first step. The letter states, “We applaud the Governor’s decision to commit the State of Montana on its own to initiate removal of the Parrot Tailings, using restoration dollars to jumpstart remedial work...” The letter states its expectation that these funds be a loan against a final Butte settlement.

Response: The draft Revision proposes to advance \$8.5 million of the SSTOU/SBC Excess Remediation Funds along with \$10 million BAO restoration funds towards completion of the Parrot Project. The \$8.5 million would be expended on a pro rata basis with the first \$8.5 million allocated in the 2012 Butte Area One Final Restoration Plan (BAO Plan) for restoration of Upper Silver Bow Creek, and would be reimbursed to the extent feasible.

Comment 3 and 4: The Restore Our Creek Coalition letter requests that SSTOU/SBC Excess Remediation Funds be committed to on-site operation and maintenance or other restoration activities in the upper reaches of Silver Bow Creek, and not be used for staffing in Helena.

Response: It seems the letter is referring to the funds remaining in the SSTOU remediation fund rather than the SSTOU/SBC Excess Remediation Funds, and is therefore beyond the scope the Revision. The Montana Department of Environmental Quality (DEQ) is responsible for the

remedial actions associated with the SSTOU, which include operation and maintenance. The DEQ response to the Greenway Service District letter, which discusses certain remedial action components, is included in Appendix 1.

Comment 5: The Restore Our Creek Coalition letter requests that NRDP take a leading role to ensure that funds set aside for restoration not be used in place of remedy funds. The Restore Our Creek Coalition states that, “instead, we enthusiastically support the sort of cooperative balance of remedy and restoration funds needed to achieve a successful and satisfactory cleanup.”

Response: NRDP acknowledges the letter’s support of a cooperative balance of remedy and restoration. This has been a successful model in the SSTOU, the Clark Fork River operable unit, and the Milltown operable unit. A Butte Priority Soils Operable Unit consent decree remains the State’s goal. The consent decree must be fair, reasonable, in the public interest, and consistent with the goals of CERCLA. This requires acceptable remedy/restoration coordination and an acceptable remedy funding contribution, as well as implementation of a protective and compliant remedy. The State has consistently advocated over the years that restoration funds should not replace those required for remedy.

Category 3: Greenway Service District; Letter 3:

Comment: The Greenway Service District letter focuses on DEQ’s use of the SSTOU remediation fund. The letter primarily discusses Institutional Controls, Operation and Maintenance, and their costs.

Response: The Greenway Service District letter focuses on the funds remaining in the SSTOU remediation fund and how the costs should be estimated for the use of these funds, rather than the use of the SSTOU/SBC Excess Remediation Funds, and is therefore beyond the scope of the Revision. DEQ is responsible for the remedial actions associated with the SSTOU, which includes operation and maintenance. DEQ has provided a response to the Greenway Service District letter, which is included in Appendix 1.

Category 4: Opposing the removal of the Parrot Tailings; Letter 7:

Comment: This letter opposes the removal of the Parrot Tailings, as not a worthwhile effort. The commenter proposes the SSTOU/SBC Excess Remediation Funds be used to lower the taxes of all the Butte residents in any possible way, such as maintaining Butte’s existing green spaces.

Response: The NRDP and other State agencies have studied the removal of the Parrot Tailings and have concluded these tailings are the main source of contamination of the alluvial groundwater aquifer and a source of contamination to Silver Bow Creek. The contamination impacts from the Parrot Tailings include natural resources associated with this area, including groundwater, surface water, and aquatic life. The Parrot Tailings project meets the criterion set forth in Section 7.3 of the Process Plan for the use of the SSTOU/SBC Remediation Excess Funds for, “specific projects to be determined based on the overall status of the restoration of resources and services within the Upper Clark Fork River drainage at and above Deer Lodge, with the Cottonwood Creek drainage being the northern boundary, including the Silver Bow Creek and Warm Springs Creek drainages.”

The Parrot Tailings area is located within the Silver Bow Creek drainage, and the resources and services provided remain affected.

As for using the funds to lower the taxes of all the residents of Butte, this is not an allowable use of NRD funds. NRD restoration funds must be spent on restoring, replacing, or acquiring the equivalent of the natural resources injured. Approximately \$130 million in restoration actions have been spent or allocated within Butte Silver Bow County for restoring natural resources, replacing drinking water infrastructure for the residents of Butte, and recreational replacement projects. Under both past and future funding analyses that consider all the settlement funds, about 70% of all funding will be for actions occurring in the two upper counties of the UCFRB (Butte Silver Bow and Anaconda-Deer Lodge County).

Category 5: Fritz Daily Comments; Letter 8:

Commenter makes several comments that pertain to the SSTOU/SBC Excess Remediation Funds being used to fund a portion of the Parrot Project.

Comment 1: The commenter strongly supports the use of SSTOU remaining funds to responsibly clean and restore Silver Bow Creek flowing through Butte.

Response: See response to Category 2, Comment 1, above.

Comment 2: The commenter strongly supports what he sees as the UCFRB Advisory Council's request to hold the Environmental Protection Agency and State of Montana accountable, and thanks the Advisory Council for its past support in assisting Butte.

Response: The State appreciates the commenter's support of the Advisory Council.

Comment 3: The commenter states that 88% of the original State NRD claim was for damages that occurred in Butte and Anaconda, and on Silver Bow Creek.

Response: The majority of the injuries occurred in the upper part of the UCFRB, and the majority of both past and proposed future funding has been or will be dedicated to restoration in the upper part of the UCFRB. Even considering solely the \$65.5 million covered in the Restoration Plans, the majority of this future funding (about 90%) will be dedicated to restoration in the upper part of the UCFRB. Under both past and future funding analyses that consider all the settlement funds, about 70% of all funding will be for actions occurring in the two upper counties of the UCFRB (Butte-Silver Bow and Anaconda-Deer Lodge County). Also, please refer to Category 4 response above.

Comment 4: The commenter supports the use of natural resource dollars to responsibly clean and restore the Creek if the State and the local government refuse to challenge EPA to complete these actions. Commenter believes there are sufficient funds to accomplish this task: \$70 million from the original settlement, \$45 million remains in the Silver Bow Creek cleanup, \$32 million from the Montana Pole settlement cleanup, and \$20 million from the Butte Priority Soils settlement.

Response: The settlements referred to by the commenter typically have different scopes, purposes, and requirements beyond the work necessary within BAO. The funds from other settlements have been allocated in consent decrees (SSTOU and Montana Pole OU) or in restoration plans for specific actions in other areas based on resource priorities and public input (UCFRB Aquatic and Terrestrial Resources Restoration Plans). The BAO Plan allocated \$10 million for the upper Silver Bow Creek corridor; the UCFRB Aquatic and Terrestrial Resources Restoration Plans allow allocation of monies received in SSTOU/SBC Excess Remediation Funds, and NRDP is proposing to allocate \$8.5 million toward the Parrot Project.

Comment 5: The commenter includes comments submitted to NRDP as part of public comment on the Draft Restoration Plan Amendment for the Parrot Tailings Waste Removal.

Response: Responses will be included in the response to comments on the Draft Restoration Plan Amendment for the Parrot Tailings Waste Removal.

Category 6: SSTOU Excess Remediation Funds Not Excess Funds; Letter 9:

Comment: The commenter suggests that none of the SSTOU/SBC Excess Remediation Funds should be allocated to actions at this time. The commenter feels strongly that the SSTOU/SBC Excess Remediation Funds should not be referred to as “excess” funds, and these dollars should be treated like the coal trust fund, to be set aside for a time, and a serious review of the current condition and past practice be evaluated so the actions taken are not wasteful. The commenter referenced the work completed on Silver Bow Creek as affirming the basis for the State’s UCFRB lawsuit.

Response: NRDP acknowledges the recognition of the work along Silver Bow Creek, and believes the Silver Bow Creek work, along with other restoration actions implemented throughout the UCFRB, show the importance of the State’s lawsuit pertaining to the natural resources in the UCFRB. NRDP believes it is important to address contamination and its effects in a timely manner to limit the effects of contamination on the injured natural resources.

The commenter questions calling the SSTOU/SBC Excess Remediation Funds “excess.” The SSTOU Consent Decree requires those funds determined by the United States and the State not required for remedy (including reasonable estimates for O&M) to be transferred to the State’s UCFRB Restoration Fund. Specifically in regards to the SSTOU/SBC Excess Remediation Funds, these are funds that will not be needed by DEQ to address remedy, including operation and maintenance of the SSTOU (see DEQ letter addressing comments by the Greenway Service District). The Revision proposes to place \$8 million of the \$16.5 million in reserve accounts to be allocated to aquatic and terrestrial restoration during the 2018 update of the Restoration Plans. \$8.5 million is to partially fund the Parrot Project, an action that the State believes is necessary to help protect the investment made downstream in Silver Bow Creek and the Clark Fork River. Removal of the Parrot Tailings will help restore the alluvial aquifer in Butte, improve groundwater and surface water quality, streambed sediments, and, ultimately, the fishery of Silver Bow Creek.

APPENDIX 1

Aquatics and Terrestrial Plan Public Comments Received by NRDP	
1	Northey Tretheway of Restore Our Creek Coalition
2	Chris Brick of Clark Fork Coalition
3	James M. Manning of Greenway Service District
4	Martha Cooney-Simonich
5	Ed Simonich
6	Larry Curran
7	Cameron Moylan
8	Fritz Daily
9	Tom Bowler

Coleman, Kathleen

From: Richard Tretheway <ntretheway59701@yahoo.com>
Sent: Monday, March 14, 2016 4:50 PM
To: Natural Resource Damage Program
Cc: Jocelyn Dodge; Bill Macgregor; Pat Dudley
Subject: Butte Area One Plan Amendment--- Parrot Tailings Waste Removal Comments
Attachments: NRDP.pdf

March 14, 2016

Natural Resource Damage Program
P.O. Box 201425
Helena, MT 59620

RE: UCFRB Aquatic and Terrestrial Resources Restoration Plans, Revision Schedule and Process for SSTOU/SBC Excess Remediation Funds

The following are comments submitted by Restore Our Creek Coalition:

The Restore Our Creek Coalition urges Montana's Natural Resources Damages Program (NRDP) to focus its attention, and its unspent funds from work completed on the Streamside Tailings Operable Unit (SSTOU), on the parts of Silver Bow Creek that have thus far been neglected, namely the parts of the creek that begin at Texas Avenue just below Montana Resources' ongoing mining operations and continue through the heart of Butte downstream to the I-90 overpass at the west end of town.

Mining and smelting wastes left in place in full contact with known groundwater flow patterns at the head of Silver Bow Creek threaten completed downstream cleanup and condemn Butte and its businesses and residents to a doubt-filled future that downstream communities have been spared. This is critically important as NRDP considers how to commit unspent funds from the SSTOU cleanup and accordingly how to revise the current Upper Clark Fork River Basin (UCFRB) Aquatic and Terrestrial Resources Restoration Plan.

At the heart of the Coalition's appeal is the common-sense observation that Silver Bow Creek continues from Warm Springs Ponds all the way up to the boundary of current mining operations in Butte and that funds allocated to clean up Silver Bow Creek should respect the entire run of the waterway and not be bound by the administrative bureaucratic distinction that artificially divided Superfund work into different "operable units." Streamside tailings left in place at the Parrot Tailings, Diggings East, and Northside Tailings, among other sites in the city of Butte are not designated as part of the Streamside Tailings "Operable Unit" but are undeniably (and legally) part of Silver Bow Creek and should be treated as such. Diversion of these unspent funds away from cleanup and restoration of Silver Bow Creek is unacceptable to the Coalition.

Over the past year the Coalition has convened meetings of the people of Butte to gauge attitudes about the future for this stretch of the creek from Texas Avenue downstream through the heart of Butte, and the public response has been vocal, impassioned, and often fearful. Having lived with the consequences of Butte's mining history for so many years, and having watched aggressive cleanup activities proceed downstream along the Clark Fork and lower Silver Bow Creek, people here are wondering why THEIR portion of the creek—a

portion that is literally in their backyard, with copper-encrusted bones exposed where children play--has never received comparable attention.

We applaud the Governor's decision to commit the State of Montana on its own to initiate removal of the Parrot Tailings, using restoration dollars to jumpstart remedial work (that has been stalled by EPA's reluctance to acknowledge new groundwater data) as what we assume will be a loan against the expected final settlement negotiated in the Consent Decree. While that is a good first step, a real commitment to this effort will be seen by designating remaining SSTOU funds to the entire length of Silver Bow Creek, from Texas Avenue downstream. The Coalition expects that such a commitment of restoration funds would serve as an incentive to encourage partners in the Consent Decree negotiations to strategically deploy combinations of remedial and restoration funds to secure a more complete and satisfactory Superfund cleanup.

More particularly, the Coalition strongly opposes sequestering unused SSTOU funds for long-term off-site staffing at DEQ headquarters in Helena. Any set-asides of long-term Operation and Maintenance funding should be carefully defined in terms of anticipated on-site needs, with quantitative benchmarks established for justifying such commitments. We support such justifiable commitment of funds to ensure that cleanup work is sustained over the long run, and that established remedies remain protective of human health and the environment, but we oppose using these restoration funds for long-term DEQ staffing in Helena.

As NRDP staff engage in this revision of its Aquatic and Terrestrial Resources Restoration Plan the *Restore Our Creek Coalition* in Butte urges them to commit to what our group's name implies: optimize the productive value of these unspent funds by focusing them on the last stretch of Silver Bow Creek that has not received the kind of cleanup that the creek's lower reaches have enjoyed.

In short, we ask

- that the NRDP commit these funds to *restoring our creek* to its fullest and most productive potential as a clean and functional waterway running through the heart of our community;
- that the SSTOU unused funds be committed to on-site O&M or other restoration activities in the upper reaches of Silver Bow Creek;
- that the SSTOU unused funds not be used for staffing in Helena; and
- that the NRDP take a leading role among responsible parties to ensure that funds set aside for restoration not be used instead of remedy funds: instead, we enthusiastically support the sort of cooperative balance of remedy and restoration funds needed to achieve a successful and satisfactory cleanup.

Thank you for this opportunity to comment, and we look forward to your response.

Northey Tretheway

Spokesperson, Restore Our Creek Coalition

c/o Project Green of Montana, Inc.

465 East Galena

Butte, MT 59701

restoreourcreek@gmail.com

Coleman, Kathleen

From: Christine Brick <chris@clarkfork.org>
Sent: Monday, March 14, 2016 12:23 PM
To: Natural Resource Damage Program
Subject: Comments
Attachments: CFC_comment SSTOU excess funds.pdf

Please see attached the Clark Fork Coalition's comments on SSTOU/SBC Excess Remediation Funds. Thank you!
Chris

Christine Brick, Ph.D.
Science Director
Clark Fork Coalition
P.O. Box 7593
Missoula, MT 59807
406.542.0539 ext 202
www.clarkfork.org



P.O. Box 7593, Missoula, MT 59807 ph. 406-542-0539

March 14, 2016

To: NRDP staff
RE: SSTOU/SBC Excess Remediation Funds

The Clark Fork Coalition supports revising the UCFRB Aquatic and Terrestrial Resources Restoration Plans to place \$8 million of the SSTOU excess funds in the UCFRB Aquatic and Terrestrial account for reimbursing the Aquatic and Terrestrial Resources funds for the Silver Bow Creek Greenway set-aside. We also support allocating the remaining \$8.5 million of the SSTOU excess funds to an account to partially fund removal of the Parrot tailings. We've long supported the removal of the Parrot, Diggings East and Northside tailings through remedy, but we also realize that partial state funding of these removals may be necessary to reach an agreement with the PRPs. We believe it's appropriate to use the SSTOU excess funds for this purpose.

Thank you for the opportunity to comment.

Sincerely,

Christine Brick
Science Director
406.542.0539 ext 202
chris@clarkfork.org



Greenway Service District

Anaconda Deer Lodge and Butte-Silver Bow Counties

March 11, 2016

RECEIVED

MAR 14 2016

**NATURAL RESOURCE
DAMAGE PROGRAM**

**Greenway
Management
Board**

UCFRB Advisory Council and Staff
Natural Resource Damage Program
P.O. Box 201425
Helena, MT 59620-1425

Re: Greenway Service District Comments and Questions on the Revised
Schedule and Process for the SSTOU/SBC Excess Remediation Funds

- Kay Eccleston - ADL
- JP Gallagher - BSB
- Dennis Henderson - BSB
- Milo Manning - ADL
- Lou Parrett - BSB
- Joe Shoemaker - BSB
- Paul Smith - ADL
- Lorry Thomas - ADL

Dear Ladies and Gentlemen:

The Greenway Service District (GSD) has reviewed the information provided to the Upper Clark Fork Advisory Council members and the public. This includes the Montana Natural Resource Damage Program's (NRDP) discussion of the process for updating the UCFRB Aquatic and Terrestrial Resources Restoration Plans (Restoration Plans), dated February 12, 2016, and the discussion of the Streamside Tailings Operable Unit (SSTOU) Remedy Implementation and Costs, dated November 30, 2015 to the US Environmental Protection Agency, as it relates to the SSTOU/SBC Excess Remediation funds. Based on the review of the proposed changes to the plan, the GSD has significant questions regarding how costs for the Institutional Controls (IC's) at the site were estimated and what specific IC's are planned for the site.

We would ask that the Advisory Council carefully review the cost estimates for the SSTOU remainder fund, which in turn forms the basis for the excess funds, and determine if these cost estimates include adequate funds for IC's, which must be funded on a permanent basis pursuant to the SSTOU Record of Decision (ROD) as explained below.

Background:

The following background information from the ROD is provided to provide basic information regarding the ROD requirements for ICs, specifically as they relate to fundamental cleanup decisions and future maintenance of the SSTOU remedy.

The final remedial action objectives (RAOs) and final remediation standards for tailings and impacted soils in the SSTOU are presented on page 105 of the ROD. The need for ICs is stated clearly in the RAOs. Item #1 of the RAOs on Page 105 of the ROD states:

Information:

County Courthouse
800 S. Main
Anaconda, MT 59711
406/563-4011

- or -

County Courthouse
155 W. Granite
Butte, MT 59701
406/497-6469

“Prevent human exposure to the tailings/impacted soils from residential or occupational activity within the SSTOU. This will be accomplished, in part, through institutional controls that will require the entire OU to be developed into a recreational corridor.”

(emphasis added)

Section IX - Selected Remedy, Engineering and Institutional Controls, Page 112 of the ROD states further:

“Because all OU contamination will remain on-site, a creative and secure institutional controls, monitoring, and maintenance (ICMM) program will be required. This ICMM program must: (1) ensure adequate land use/restrictions to safeguard the waste materials treated in-situ and/or relocated to adjacent repositories, (2) be managed, maintained and monitored in perpetuity, and (3) ensure that shallow contaminated groundwater use is controlled.”

(emphasis added)

Note: Even though the majority of the contamination was removed and disposed at the Opportunity Ponds Waste Management Area (WMA), the site has only been cleaned to recreational standards and capped and/or residual tailings/impacted soils remain at the site and ICs are needed to *“Prevent human exposure to the tailings/impacted soils from residential or occupational activity within the SSTOU.”*

Item 15 on Page 5 of the Declaration in the ROD states:

“An institutional controls program, which must be funded on a permanent basis as part of the remedy, will be coordinated through a joint effort of the Butte-Silver Bow and Anaconda-Deer Lodge local governments. Institutional controls, monitoring and maintenance will be integrated into a Silver Bow Creek corridor management program. The program will be established and maintained in a manner that will ensure that all aspects of the OU remedial action, both within and outside of the floodplain, are maintained for the long-term, and ensure that the future land use in the area is consistent with the scenarios upon which cleanup decisions for this action have been based.”

(emphasis added)

Item 16 on Page 6 of the Declaration in the ROD states:

“Construction of the proposed remedy will be coordinated with other cleanup activities along Silver Bow Creek. Releases of contaminated instream sediments and surface waters prior to, during, and following remedial action, which might re-contaminate Silver Bow Creek, will be suitably controlled and treated. The design and schedule of the OU remedy will be coordinated with the design and installation of upstream sediment control basins. If adequate upstream control facilities are not in service at the time of initiation of construction of this remedy, then additional sediment control and treatment facilities will be provided as a part of this remedy or other scheduling adjustments will be made. The implementation of the remedy will also be coordinated to the maximum extent possible with the possible implementation of the State’s

natural resource damage restoration plan in order to avoid duplication of effort and unnecessary costs and to maximize the benefits to the area.”

(emphasis added)

The GSD has obtained funding for ecological restoration features from NRDP and these features were installed by DEQ with the RA. The GSD has also obtained funding from the NRDP used to purchase easements and properties and establish an open-space recreational corridor on the remediated portions of the SSTOU, which will serve as permanent land use restrictions in the corridor. The GSD is actively pursuing acquisition of additional easements and properties within the corridor.

Section IX – Selected Remedy, Components of the Selected Remedy, Monitoring, Coordination and Schedule on Page 88 of the ROD reiterates and strengthens item 15 on page 5 of the Declaration:

“An institutional controls program, which must be funded on a permanent basis as part of the remedy, will be coordinated through a joint effort of the Butte-Silver Bow and Anaconda-Deer Lodge local governments. Institutional controls, monitoring and maintenance will be integrated into a Silver Bow Creek corridor management program. The program will be established and maintained in a manner to be approved by the agencies that will ensure that all aspects of the OU remedial action, both within and outside of the floodplain, are maintained for the long-term, that future land uses in the area are consistent with the scenarios upon which cleanup level decisions for this action have been based (recreational) and that the institutional control, monitoring and maintenance mechanisms will be adequate to ensure protectiveness over the long term.”

(emphasis added)

Section IX – Selected Remedy, Remedial Design Remedial Action Process on Page 113 of the ROD states:

“Provided that the final design of the SST OU remedy can attain the SST OU cleanup criteria and performance standards, it should to the degree possible incorporate components consistent with the following environmental and community improvement actions in the project area:

A Silver Bow Creek recreational corridor land uses as designated and adopted by Butte-Silver Bow and Anaconda-Deer Lodge county governments;

The use of wetlands treatment for Butte wastewater nutrient loadings and/or Butte area storm water runoff metals Loadings, if appropriate;

Preservation and enhancement of significant historical and prehistorical resources in accordance with the Regional Historic Preservation Plan; and

Coordination with pertinent restoration actions implemented as part of the Upper Clark Fork River Basin natural resource damage restoration plan.”

(emphasis added)

No specific active remedy for the contaminated shallow groundwater aquifer was specified in the ROD. The ROD states:

“After the sources of continuing contamination are addressed, groundwater quality will improve slowly by attenuation and dilution in areas where it is currently impacted. Institutional controls restricting use of and exposure to contaminated groundwater will be necessary until the standards are attained.”

(emphasis added)

Accordingly, the ROD requires “*institutional controls that will require the entire OU to be developed into a recreational corridor*” and the institutional controls program must ensure there are adequate land use restrictions. The ROD also states that the ICs shall be managed and maintained by the counties of BSB and ADL, and that the funding for the Cs shall be a part of the remedy. To this end, the counties created the GSD, which was created expressly to design, develop, oversee and manage the Silver Bow Creek Greenway, and as such the Silver Bow Creek Greenway is an integral part of, and central to, Institutional Controls implemented to protect Remedial Actions conducted in the SST OU.

Questions and comments related to the proposed changes to the plan:

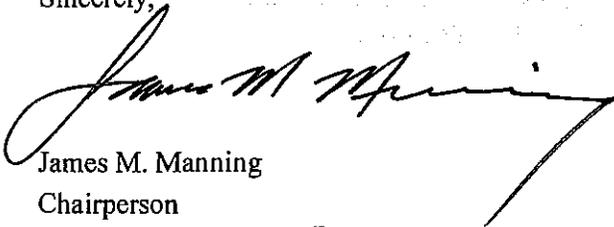
1. Does the evaluation of the SSTOU remainder include the funds necessary to establish a formal Institutional Controls Monitoring and Maintenance (ICMM) plan for the long-term management and maintenance of the SSTOU Remedy?
2. If so, what specific elements and costs were considered in the proposed corridor management program and the ICMM Plan?
3. Does this estimate include funds for operations, management and maintenance of the Silver Bow Creek Greenway?
4. When will the NRDP and DEQ consult with the two affected counties (Anaconda-Deer Lodge and Butte-Silver Bow, MT) or with the GSD (the organization created by the counties to plan, design, construct and operate the Silver Bow Creek Greenway, funded by UCFRB restoration grants), collectively the organizations responsible for implementing the site-wide ICs per the ROD?

In the past, the EPA has considered the issue of institutional controls (ICs) as a significant component of the remedy for the SSTOU. Those activities, as cited by DEQ, include routine monitoring and maintenance, potential re-vegetation activities and potential as-yet to be identified maintenance items, as well as costs for the ICs and addressing five-year review recommendations.

The GSD has worked closely with DEQ and the NRDP to cost-effectively perform remedial and restoration work together, the significance of these supplemental restoration activities have contributed to the “dramatic” visual transformation of Subareas 1 and 2. Without restoration dollars secured from the NRDP by the GSD, these areas, as well as Subareas 3 and 4, would not exhibit “dramatic” improvements to the aquatic and terrestrial habitat. Restoration dollars also support the development of the Silver Bow Creek Greenway’s recreational features – trails and trailhead development, pedestrian bridges and other outdoor recreation components, as well as access control features, including gates and fences and regulatory signage and on-going maintenance.

The GSD firmly believes that the ultimate end land use, the Silver Bow Creek Greenway, with its recreational and access control features, meet the provisions of the ROD and are key components of the ICS, and should be recognized and fully funded as such.

Sincerely,



James M. Manning
Chairperson

cc: Connie Ternes-Daniels, Chief Executive, ADL
Matt Vincent, Chief Executive, BSB
Tom Livers, MDEQ
Tom Stoops, MDEQ
Joel Chavez, MDEQ
Daryl Reed, MDEQ
Bill Kirley, MDEQ
Jon Morgan, MDEQ
Jenny Chambers, MDEQ
Harley Harris, NRDP
Mary Capdeville, NRDP
Jim Ford, NRDP
Pat Cuneen, NRDP
Shaun McGrath, EPA
Deb Thomas, EPA
Joe Vranka, EPA
Henry Elsen, EPA
Kristine Edwards, EPA
Nikia Green, EPA
Jim Freeman, US DOJ

March 11, 2016

RECEIVED

MAR 14 2016

**NATURAL RESOURCE
DAMAGE PROGRAM**

NRDP,

I am in favor of the answer
provided by RDC (attached)

Maitha V. Cooney-Snowell

The Restore Our Creek Coalition urges Montana's Natural Resources Damages Program (NRDP) to focus its attention, and its unspent funds from work completed on the Streamside Tailings Operable Unit (SSTOU), on the parts of Silver Bow Creek that have thus far been neglected, specifically the parts of the creek that begin at Texas Avenue just below Montana Resources' ongoing mining operations and continue through the heart of Butte downstream to the I-90 overpass at the west end of town.

Mining and smelting wastes left in place in full contact with known groundwater flow patterns at the head of Silver Bow Creek threaten completed downstream cleanup and condemn Butte and its businesses and residents to a doubt-filled future that downstream communities have been spared. This is critically important as NRDP considers how to commit unspent funds from the SSTOU cleanup and accordingly how to revise the current Upper Clark Fork River Basin (UCFRB) Aquatic and Terrestrial Resources Restoration Plan.

At the heart of the Coalition's appeal is the common-sense observation that Silver Bow Creek continues from Warm Springs Ponds all the way up to the boundary of current mining operations in Butte and that funds allocated to clean up Silver Bow Creek should respect the entire run of the waterway and not be bound by the administrative bureaucratic distinction that artificially divided Superfund work into different "operable units." Streamside tailings left in place at the Parrot Tailings, Diggings East, and Northside Tailings, among other sites in the city of Butte are not designated as part of the Streamside Tailings "Operable Unit" but are undeniably (and legally) part of Silver Bow Creek and should be treated as such. Diversion of these unspent funds away from cleanup and restoration of Silver Bow Creek is unacceptable to the Coalition.

Over the past year the Coalition has convened meetings of the people of Butte to gauge attitudes about the future for this stretch of the creek from Texas Avenue downstream through the heart of Butte, and the public response has been vocal, impassioned, and often fearful. Having lived with the consequences of Butte's mining history for so many years, and having watched aggressive cleanup activities proceed downstream along the Clark Fork and lower Silver Bow Creek, people here are wondering why *THEIR* portion of the creek—a portion that is literally in their backyard, with copper-encrusted bones exposed where children play—has never received comparable attention.

We applaud the Governor's decision to commit the State of Montana on its own to initiate removal of the Parrot Tailings, using restoration dollars to jumpstart remedial work (that has been stalled by EPA's reluctance to acknowledge new groundwater data) as what we assume will be a loan against the expected final settlement negotiated in the Consent Decree. While that is a good first step, a real commitment to this effort will be seen by designating remaining SSTOU funds to the entire length of Silver Bow Creek, from Texas Avenue downstream. The Coalition expects that such a commitment of restoration funds would serve as an incentive to encourage partners in the Consent Decree negotiations to strategically deploy combinations of remedial and restoration funds to secure a more complete and satisfactory Superfund cleanup.

More particularly, the Coalition strongly opposes sequestering unused SSTOU funds for long-term off-site staffing at DEQ headquarters in Helena. Any set-asides of long-term Operation and Maintenance funding should be specifically identified in terms of anticipated on-site needs, with quantitative benchmarks established for justifying such commitments. We support such justifiable commitment of funds to ensure that cleanup work is sustained over the long run, and that established remedies remain protective of human health and the environment, but we oppose using these restoration funds for long-term DEQ staffing in Helena.

As NRDP staff engage in this revision of its Aquatic and Terrestrial Resources Restoration Plan the *Restore Our Creek Coalition* in Butte urges them to commit to what our group's name implies: optimize the productive value of these unspent funds by focusing them on the last stretch of Silver Bow Creek that has not received the kind of cleanup that the creek's lower reaches have enjoyed.

In short, we ask

- that the NRDP commit these funds to *restoring our creek* to its fullest and most productive potential as a clean and functional waterway running through the heart of our community;
- that the SSTOU unused funds be committed to on-site O&M or other restoration activities in the upper reaches of Silver Bow Creek;
- that any set-asides of long-term Operation and Maintenance funding should be specifically identified in terms of anticipated on-site needs, with quantitative benchmarks established for justifying such commitments.
- that the SSTOU unused funds not be used for staffing in Helena; and
- that the NRDP take a leading role among responsible parties to ensure that funds set aside for restoration not be used instead of remedy funds: instead, we enthusiastically support the sort of cooperative balance of remedy and restoration funds needed to achieve a successful and satisfactory cleanup.

Thank you for this opportunity to comment, and we look forward to your response.

11 Mar 16

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MAR 14 2016

**NATURAL RESOURCE
DAMAGE PROGRAM**

NRDP,

I support the position of ROC
attached.

Sincerely,

Ed Diamond

The Restore Our Creek Coalition urges Montana's Natural Resources Damages Program (NRDP) to focus its attention, and its unspent funds from work completed on the Streamside Tailings Operable Unit (SSTOU), on the parts of Silver Bow Creek that have thus far been neglected, specifically the parts of the creek that begin at Texas Avenue just below Montana Resources' ongoing mining operations and continue through the heart of Butte downstream to the I-90 overpass at the west end of town.

Mining and smelting wastes left in place in full contact with known groundwater flow patterns at the head of Silver Bow Creek threaten completed downstream cleanup and condemn Butte and its businesses and residents to a doubt-filled future that downstream communities have been spared. This is critically important as NRDP considers how to commit unspent funds from the SSTOU cleanup and accordingly how to revise the current Upper Clark Fork River Basin (UCFRB) Aquatic and Terrestrial Resources Restoration Plan.

At the heart of the Coalition's appeal is the common-sense observation that Silver Bow Creek continues from Warm Springs Ponds all the way up to the boundary of current mining operations in Butte and that funds allocated to clean up Silver Bow Creek should respect the entire run of the waterway and not be bound by the administrative bureaucratic distinction that artificially divided Superfund work into different "operable units." Streamside tailings left in place at the Parrot Tailings, Diggings East, and Northside Tailings, among other sites in the city of Butte are not designated as part of the Streamside Tailings "Operable Unit" but are undeniably (and legally) part of Silver Bow Creek and should be treated as such. Diversion of these unspent funds away from cleanup and restoration of Silver Bow Creek is unacceptable to the Coalition.

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- that the SSTOU unused funds not be used for staffing in Helena; and
- that the NRDP take a leading role among responsible parties to ensure that funds set aside for restoration not be used instead of remedy funds: instead, we enthusiastically support the sort of cooperative balance of remedy and restoration funds needed to achieve a successful and satisfactory cleanup.

Thank you for this opportunity to comment, and we look forward to your response.

Coleman, Kathleen

From: Larry Curran <lcurran@in-tch.com>
Sent: Sunday, March 13, 2016 1:23 PM
To: Natural Resource Damage Program
Subject: Parrot Tailings Plan

Please accept this email as my support for use of Upper Clark Fork River Basin (UCFRB) funds for removal of the Parrot Tailings, which will help restore Silver Bow Creek as it flows through Butte. I am in full support of the efforts of the Restore Our Creek Coalition (ROCC) to restore the environmental damage caused by mining activity. The ROCC letter provides an excellent discussion of the need for the proposed Natural Damage Resource Program (NRDP) amendment.

Use of UCFRB funds for restoration activity meets expenditure criteria set out by the Montana Department of Justice, and CERCLA. This activity will help address the highest priorities outlined in the Silver Bow Creek Restoration Plan approved in December 2005. Removal of the Parrot Tailings has strong public support.

It is regrettable that the Environmental Protection Agency (EPA) and British Petroleum/ARCO, are forcing use of scarce restoration dollars to address an inadequate remediation. I urge NRDP, the Governor, and the Montana Department of Environmental Quality to continue efforts toward a complete clean-up in Butte. It will provide positive impact now and for future generations.

Larry Curran
6 Bittersweet Dr.
Butte, MT 59701
406-494-5470

Coleman, Kathleen

From: Cameron Moylan <cameron.moylan.j@gmail.com>
Sent: Thursday, February 25, 2016 6:53 PM
To: Natural Resource Damage Program
Subject: Public Comment on Parrot Tailings Proposal

Dear NRDP Reader,

The whole proposal to remove the Parrot Tailings ought to be scrapped. In all of my years, I have never seen such a frenzy being stirred up over a ditch that is dry for much of the year.

Even if the aquifer beneath the tailings could be cleaned up by spending tens of millions of dollars to tear down the finest county shops in the state and by digging a huge pit in the middle of town, it wouldn't be worth it.

The aquifer is indeed contaminated, but there is a good chance that the contamination is naturally occurring. And even if it wasn't, nobody is being poisoned by it (not even the fish). In fact, Butte has some of the finest drinking water in the country. A city only needs one reliable source of clean drinking water, and Butte has at least three. This means that the only reason to remove the tailings, which exist only in residual amounts, I might add, would be to protect lower Silver Bow Creek from minute amounts of contamination at some point in the future. And this threat, while widely feared, is far from imminent.

My biggest problem with this proposal is the fact that it seems to be part of a movement to try and turn Butte into an environmental paradise. This goal may sound wonderful, but it is also completely unrealistic. Whether people like it or not, the Berkley Pit is a permanent fixture of Butte. As long as this is the case (which will be forever). Most residents and outsiders will view Butte as an Environmental Disaster. But just because Butte will always be viewed as an environmental disaster by many, doesn't mean that the city has to be an economic disaster as well.

My point is, that this money can be spent in ways that would help Butte far more than the current proposal. In all actuality, if the current proposal came to fruition, it would hurt Butte economically far more than it would help it. This idea that the publicity of the Parrot Project would be good for the local economy is asinine. The fact is, people around the state, and the rest of the country, would see footage of the county shops being destroyed, and dump truck loads of tailings and earth being dumped into to Berkely Pit and they would think: "Look at how contaminated Butte is." A beautified creek may be the end result, but it would be at the expense of Butte's economic well-being, not to mention the expense of tens of millions of dollars that the state won through a tax-payer backed law-suit.

Instead, I propose that the money which has not already been spent be used to lower the taxes of all Butte residents in any way possible. I understand that the money is supposed to only be used for "environmental improvement." But there are ways to use it for both causes. For example: the money could be put into the already existing fund for maintaining the city's green-spaces. This could certainly count as environmental improvement, and the portion of people's property taxes that usually cover this expense could be completely eliminated for decades to come; especially if the money was invested so that the accrued interest could cover most or all of the yearly expenses. If Butte could be advertised as the lowest taxed city in the state, the it would immediately start to experience the economic boom that so many residents are starving for.

I would appreciate a call to my mobile phone at any time, for the assurance that this letter has not fallen upon deaf ears. My number is 1(406)599-3199.

Sincerely,
 Cameron J. Moylan

208 South Washington St.
 Butte, MT 59701

Coleman, Kathleen

From: Fritz Daily <buttedaily@bresnan.net>
Sent: Wednesday, February 24, 2016 1:54 PM
To: Natural Resource Damage Program
Cc: Cunneen, Padraig
Subject: Use of the remaining Silver Bow Creek Cleanup dollars
Attachments: Additional Research conducted by the Butte Natural Resource Damage Council.docx;
 Silver Bow Creek Photos.pdf

***Fritz Daily
 1901 Roosevelt Ave.
 Butte, MT 59701***



Members of the Upper Clark Fork Advisory Council;

As a former seven-term Montana Legislator who has been actively involved in Butte and Montana Superfund issues for thirty plus years I would like to offer the following thoughts and **go on record as strongly supporting the use of the remaining funds from the Silver Bow Creek cleanup from Interstate 90 to the Warm Springs Ponds to responsibly clean and restore Silver Bow Creek flowing through Butte.**

I also strongly support, as you are requesting, holding the Environmental Protection Agency and the State of Montana accountable for performing their legal and Constitutional duty for cleaning and restoring the Creek. Your group is very fortunate to have two of the most knowledgeable individuals in Mick Ringsac and Jim Kambich on this issue. Take advantage of their expertise! I thank your entire group for your support in assisting Butte in the past and I ask my thoughts become part of the official record. Let me start this email by making a few important points;

- **The decisions made today are forever decisions a have forever consequences!**
- **There is absolutely no question the Environmental Protection Agency, the State of Montana and the Butte Silver Bow Local Government, in many cases, have failed the Butte community and the entire Clark Fork Basin by not demanding a responsible cleanup and restoration of Silver Bow Creek flowing through Butte.**
- **Silver Bow Creek flowing through Butte is the Headwaters of the Clark Fork and Columbia Rivers.** A failed proper cleanup of this section of the Creek will lead to recontamination of the \$150+ million cleanup completed on Silver Bow Creek!
- **The Berkeley Pit currently contains 45 billion gallons of contaminated acidic mine water {Georgetown Lake contains 10.1 billion gallons}. It fills at a rate of seven million gallons per day and within eight years the contaminated water must be pumped/treated and discharged to Silver Bow Creek in perpetuity.** The current "lime treatment plant" is in need of major upgrades and will not treat the water to State and Federal discharge standards. If needed today because a catastrophe it would turn the recently cleaned Creek white and cause "fish kills" of cutthroat trout now appearing in the lower reaches of the Creek.
- **The most important and significant document written to date on this section of the Creek was written by Judge Brad Newman in the lawsuit filed by Silver Bow Creek Headwaters Coalition**

against the State of Montana. Judge Newman's Order addressed the legal and Constitutional issues of the Creek and not the "anti Butte" cleanup suggestions promoted by the agencies and others promoting a series of what I call "mosquito ponds" to address the issue!

- Judge Newman ruled that Silver Bow Creek flowing through Butte is a watercourse {a creek} and thus are waters of the State of Montana. Article IX Section 3 of the Montana Constitution States--- "All waters within the boundaries of the State are the property of the State, held in trust, for the use of its people."
- Silver Bow Creek was listed in 1982 and is #20 on the National Superfund Priority List. If it was not for the environmental damage done over the past one hundred years by the Anaconda Mining Company there would not have been a Superfund designation in Montana or a Natural Resource Damage claim. 88% of the original 765 million claim was for damages that occurred in Butte, Anaconda and on Silver Bow Creek.
- A recent quote by Harley Harris the Legal Counsel for the Department of Environmental Quality in the Montana Standard best sums up my thoughts--- "*no reasonable person believes this {underground} water isn't moving towards the Creek*"-- a pointed reference to the EPA, which has precisely made that assertion.

I recently wrote the following comments to the State of Montana on the **Draft Butte Area One Restoration Plan Amendment: Parrot Tailings Waste Removal Plan** {edited for this email} and believe my comments also address the use of the remaining funds from the Silver Bow Creek Cleanup.



Fritz Daily
1901 Roosevelt Ave.
Butte, MT 59701

To whom it may concern;

Several years ago my great friends and community leaders Don Peoples and Jim Kambich recommended that the tailings in and around the Civic Center be removed and work with the Atlantic Richfield Company to construct a new "state of the art" Civic Center and Convention Center in the area. They were right then and they are right now! Too bad we missed the opportunity! I'm concerned now we may again be missing another opportunity in creating a clean and restored meandering Silver Bow Creek flowing through Butte.

Butte deserves to have a clean and restored Silver Bow Creek flowing through Butte. Including; Removing the Parrott, Digging East, North Side tailings and the Blacktail Berm, and reestablish a quality meandering Creek flowing through the middle of this town that children can play in and fish and the adults of the community can enjoy the amenities as well. It should receive the same quality cleanup that was completed on the Creek from Butte to the Warm Springs Ponds. Nothing less should ever be accepted!

I find it unbelievable and unconscionable that the State of Montana and the Environmental Protection Agency have determined that it is environmentally practical and achievable to require the Atlantic Richfield/British Petroleum Company to spend \$100+ million dollars to remove the Milltown Dam, negotiated a \$82 million "buy out" to clean Silver Bow Creek from below Interstate 90 to the Warm Springs Ponds, and negotiated a \$100+ million "buy out" to clean the Clark Fork River. Yet they find it unachievable and acceptable to not responsibly clean and restore Silver Bow Creek flowing through Butte, where the contaminants came from at the Headwaters and source of the entire problem.

As the Upper Clark Fork Advisory Council has recommended---I strongly believe the State of Montana and the Butte Silver Bow Local Government must “step to the plate” and demand through Court Action or in Consent Decree Negotiations that the Environmental Protection Agency reopen the Record of Decision on Butte Priority Soils and demand that a comprehensive detailed cleanup and restoration plan be developed and implemented for the area.

The plan must include a solid financial commitment and addresses the responsible cleanup and restoration of the Creek. It must include total removal of the Parrot, Diggings East, Northside Tailings and the Blacktail Berm and reestablishes a quality meandering Creek flowing through the center of our town. It must be protective of human health and the environment as required under Superfund Law and restores the Creek and the area to a useful purpose as is also required in State law and the Montana Constitution.

If the State and the Local Government refuse to challenge the incompetence of the Environmental Protection Agency to responsibly clean and restore the creek then I support the State using Natural Resource dollars to complete the task. The States plan however, must also include a solid financial commitment and responsibly cleaning and restoring the Creek. Including total removal of all tailings, creating a quality meandering Creek flowing through the town and responsibly addressing the inefficient French Drain and Storm Sewer issue.

I believe sufficient Restoration dollars are available to accomplish this task. Including; \$70 million from the original 118 million Settlement, \$45 million remains from the Silver Bow Creek Cleanup, \$32 million from the Montana Pole Settlement Cleanup funds and \$20 million remaining in the Butte Priority Soils Settlement.

As a life-long resident of Butte and former seven-term Montana Legislature my goal has always been for the past several years to promote creating a quality meandering Silver Bow Creek flowing through Butte where the children can play and fish and the adults of the community could enjoy the amenities of the cleanup and restoration as well. I joined with Sister Mary Jo McDonald and Ron Davis to file a lawsuit against the State of Montana over the name of the Creek. The goal of our lawsuit was promoting a responsible cleanup and restoration of the Creek

Judge Newman ruled in our favor in our recent successful lawsuit and he wrote; “This litigation seeks to ensure that the State of Montana and its agencies follow the law.”

He wrote; “In this case the Plaintiffs stand in the shoes of government. They are seeking as a private attorney general to force the State to act appropriately with respect to the State’s waters held in trust for the public.”

Judge Newman also confirmed in his decision that the Creek is a watercourse and not a sewer. He wrote; “The issue raised in the complaint is not what would happen to the restoration of the creek should the State improperly change the name of the watercourse, but rather what damage already has occurred and will occur in the future as the result of the State’s actions concerning the name of the creek...”

It’s too bad the State did not spend the several hundred thousands of dollars and countless hours in trying to defeat us in our lawsuit and not in demanding the Environmental Protection Agency to develop and propose the quality cleanup and restoration of the Creek that the citizens of Butte and Clark Fork Basin deserve. The Court also ordered the State to pay our attorney, Jim Goetz, \$170,000 for their incompetence in not performing their legal and constitutional duty in dealing responsibly with cleaning and restoring the Creek. I would suggest that your committee consult with Jim Goetz and provide the funds to require the Environmental Protection Agency and the State of Montana to perform their legal and Constitutional duty to provide a cleanup and restoration of Silver Bow Creek flowing through Butte that is protective of human health and the environment!

I have spent the past thirty five plus years devoting considerable time and effort in trying to make Butte a better and more environmentally safe place to live. The past fifteen plus years much of that effort has been devoted to convince the Environmental Protection Agency, the State of Montana and the Silver Bow Local Government agency folks the importance of completing a quality cleaned and restored Silver Bow Creek flowing through Butte. I was involved in the final decision making process by Governor Schweinden in filing the \$765 million Natural Resource Damage Lawsuit.

The cleanup and restoration must include removing the tailings, addressing the French Drain issue that the State publically claims is not collecting all of the contaminated groundwater as the EPA and Arco/BP claims that it is, and responsibly addressing the storm water issue.

I absolutely do not support the cleanup and restoration of the Creek by using storm sewer retention ponds or as what I call them “mosquito ponds” to address the issue. I believe this is wrong, without merit, and is not in the best interest of Butte and the entire Clark Fork River Basin.

Hopefully our successful lawsuit will add to the credibility of a successful cleanup and restoration of the Creek as well. My concern however, is that the decisions are being made by the “anti Butte” State bureaucrats and former State bureaucrats that have got us in the mess we are in today.

I sincerely hope that my involvement and thoughts are viewed as a worthy contribution to this issue and will eventually contribute to making Butte Montana a better and more environmentally safe place to live. I regret I have not been more effective in promoting my efforts..

I am attaching photos and a copy of the research that has been conducted by the Butte Natural Resource Damage Council proving that the Environmental Protection Agency used false inaccurate and unreliable data in making the Record of Decision on Butte Priority Soils that includes Silver Bow Creek flowing though Butte. Please make these attachments part of the official record as well.

Sincerely,
Fritz Daily

Additional Research conducted by the Butte Natural Resource Damage Council and other documentation supporting that the Record of Decision on Butte Priority Soils, that includes Silver Bow Creek flowing through Butte, was made with false, incomplete and unreliable data.

- In April 2009, through research by the Montana Bureau of Mines we learned that the **groundwater in the Parrott Tailings Area is more toxic than Berkeley Pit water.** The Record of Decision again was negotiated without this critical and valuable information.
- In March 2010, we learned that there was **substantially more water flowing to Silver Bow Creek than originally projected.** An isolation test was conducted to determine the actual amount of flow and from where the water along Silver Bow Creek was flowing. Originally, it was determined that there was approximately 100 gallons per-minute flowing into the system. The new data confirms there is now 500+ gallons per minute flowing into the system. The Record of Decision again was negotiated without this critical and valuable information.
- In July 2009, we learned that the Montana Bureau of Mines was **drilling wells in the area to determine the depth and scope of the contaminated tailing in the Parrott Tailings area.** Making the Record of Decision without knowing the depth and scope of the tailing in the area is unconscionable and unbelievable!
- The Montana Bureau of Mines, in February 2011 conducted a pump test that should have been conducted prior to the Record of Decision in 2006. **This test confirmed that the groundwater in the Civic Center and Parrott Tailings areas is moving at a rate of 120 to 640 feet per day. When the decision was made by the EPA to not remove the Parrott Tailings, it was estimated that the groundwater flow above Harrison Avenue was at a rate of 2.5 feet per day. Below Harrison Avenue, it was estimated that the groundwater was flowing at a rate of 15 feet per day when in fact we now know that it is flowing at a rate of 480 to 1000 feet per day. This is quite a substantial difference. Again, the Record of Decision negotiated without this critical information.**
- **Open File Report by Nick Tucci of the Montana Bureau of Mines concerning the amount of contaminated tailings left as "waste in place" in the various tailing located along Silver Bow Creek flowing through Butte. The research was paid for by funds from the Butte Natural Resource council and approved by the State of Montana Natural Resource Damage Program documents;**
 1. **If the amount of copper and zinc remaining above the water table in the Parrot Tailings were combined with the mass in the Diggings East and Northside Tailings provided in this report, 15.3 million pounds of copper and 24.5 million pounds of zinc are estimated to remain in the unsaturated zones of the Parrott, Northside and Digging East Tailings areas. It should be noted these estimates are conservative.**
 2. **Copper and Zinc loading analysis of groundwater from the sub drain {French Drain} delivers approximately 20 pounds of copper and 60 pounds of zinc per day to the Butte Treatment Lagoons. Assuming the majority of the capper and zinc captured by the sub drain is being leached from the wastes left in place and assuming the current leaching rate remains constant, copper and zinc are likely to continue leaching into the groundwater for thousands of years. If the leaching rate**

decreases over time {a probable scenario} copper and zinc are likely to continue leaching into groundwater for tens of thousands of years to come.

- On September 26, 2006 the Montana Department of Environmental Quality in a letter to the Environmental Protection Agency writes, “**DEQ does not concur with the over reaching decision to leave accessible, major sources of groundwater contamination in place. We refer specifically to the Parrott Tailings, Diggings East tailings and the North Side Tailings.** Our concern is that leaving these wastes in place poses a significant and permanent threat to groundwater and to the long-term water quality of Silver Bow Creek.” The EPA completely ignored this information in creating the Record of Decision.
- We learned of a publication written in August 2005 called “**Cut and Run**” written by a **reputable group of local Hydrologists and Hydro-Geologists. The publication seriously criticized the Record of Decision on Butte's portion of Silver Bow Creek and the Parrott Tailings area.** This is a quote from that publication; *The U.S. Environmental Protection Agency is prepared to walk away from the nation's largest Superfund site. More precisely, EPA is prepared to allow the responsible party, Atlantic Richfield Company (now British Petroleum/ARCO), to walk away without fully cleaning up the site. As a result, millions of cubic yards of mine tailings, smelting slag and other wastes will drain in perpetuity into the headwaters of the Clark Fork and Columbia Rivers. And the City/County of Butte-Silver Bow will be relegated into an industrial waste heap with dim economic prospects for recovery. Senator Tester, there is no question these toxic tailings are already re-contaminating Silver Bow Creek, below Montana Street, that the State of Montana has already spent over \$40 million to clean.*
- ARCO and the EPA continue their **band-aid approach to cleaning and restoring the Creek** by now pouring pink concrete to correct the erosion problems caused by the incompetent decisions already made.
- Experts directly involved in the process believe the “site conceptual model” being developed by Arco detailing the amount of groundwater being captured in the **Reverse French Drain System, indicates the system is not collecting the amount of groundwater as Arco and the EPA believed it would.** I understand the site conceptual model clearly demonstrates the French Drain is not working near as well as they expected it would.
- I would also point out that **the French Drain System designed to capture the contaminated groundwater you identify in your letter has been “jetted” {cleaned} on numerous occasions because of a chemical precipitate blockage.** This jetting will be required in perpetuity to keep the French Drain clear. It is reported an obstruction of the French Drain in August 2007, was due to some kind of chemical precipitate adhering to the inside of the pipe and completely plugging off all flow from above Harrison Ave.
- In the spring of 2011, **using a blimp, a site test was conducted to determine the flow of a plume contaminating Blacktail Creek in the Oregon Avenue area.** The results of this test have not yet been released. **It is my understanding that this contamination is coming directly from the Parrott Tailings area.** The Montana Bureau of Mines will be conducting a further test in the fall of 2011 to determine that information.

Silver Bow Creek Photos
Before and after Storms

Prepared by

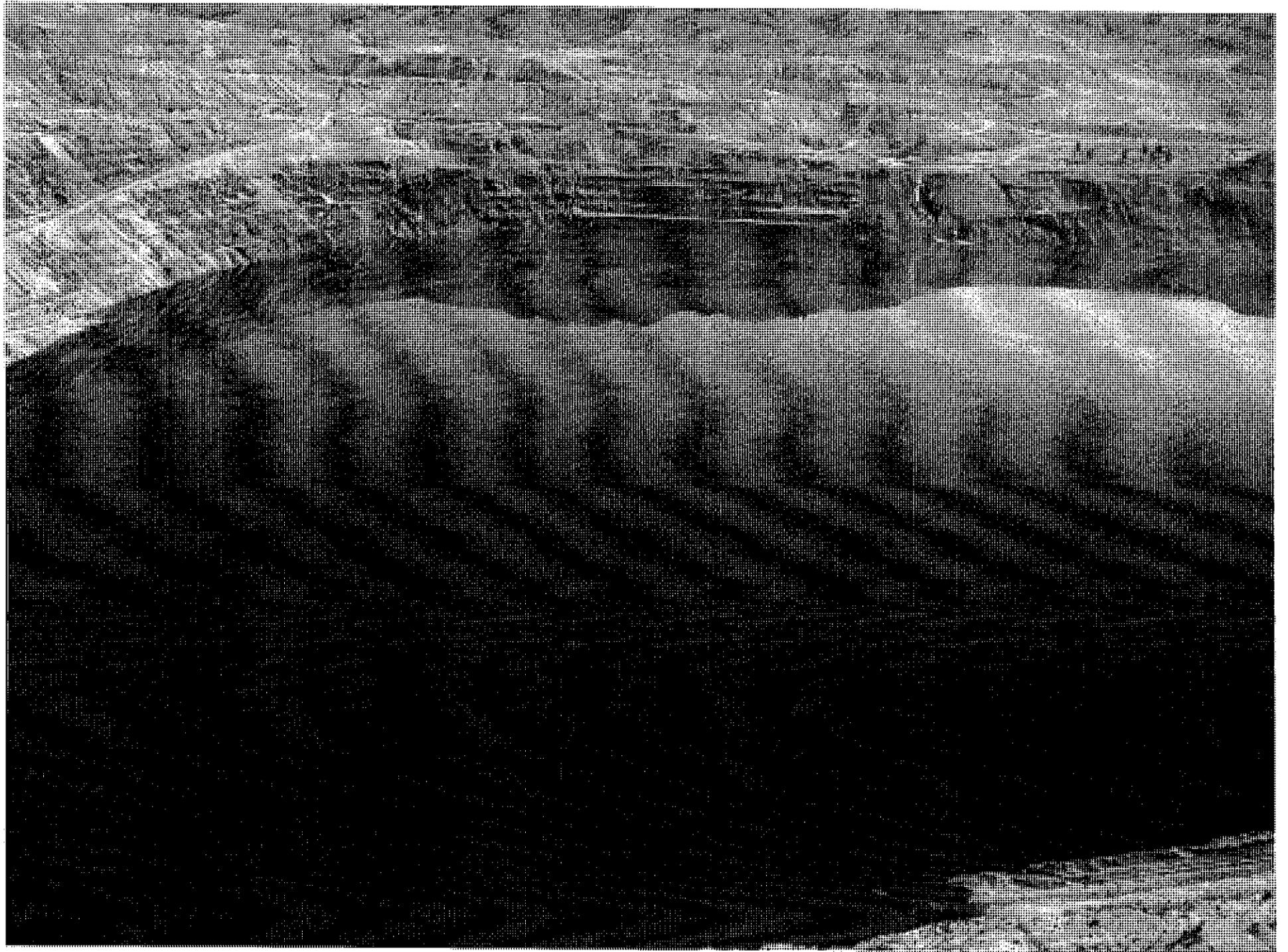
Fritz Daily

for

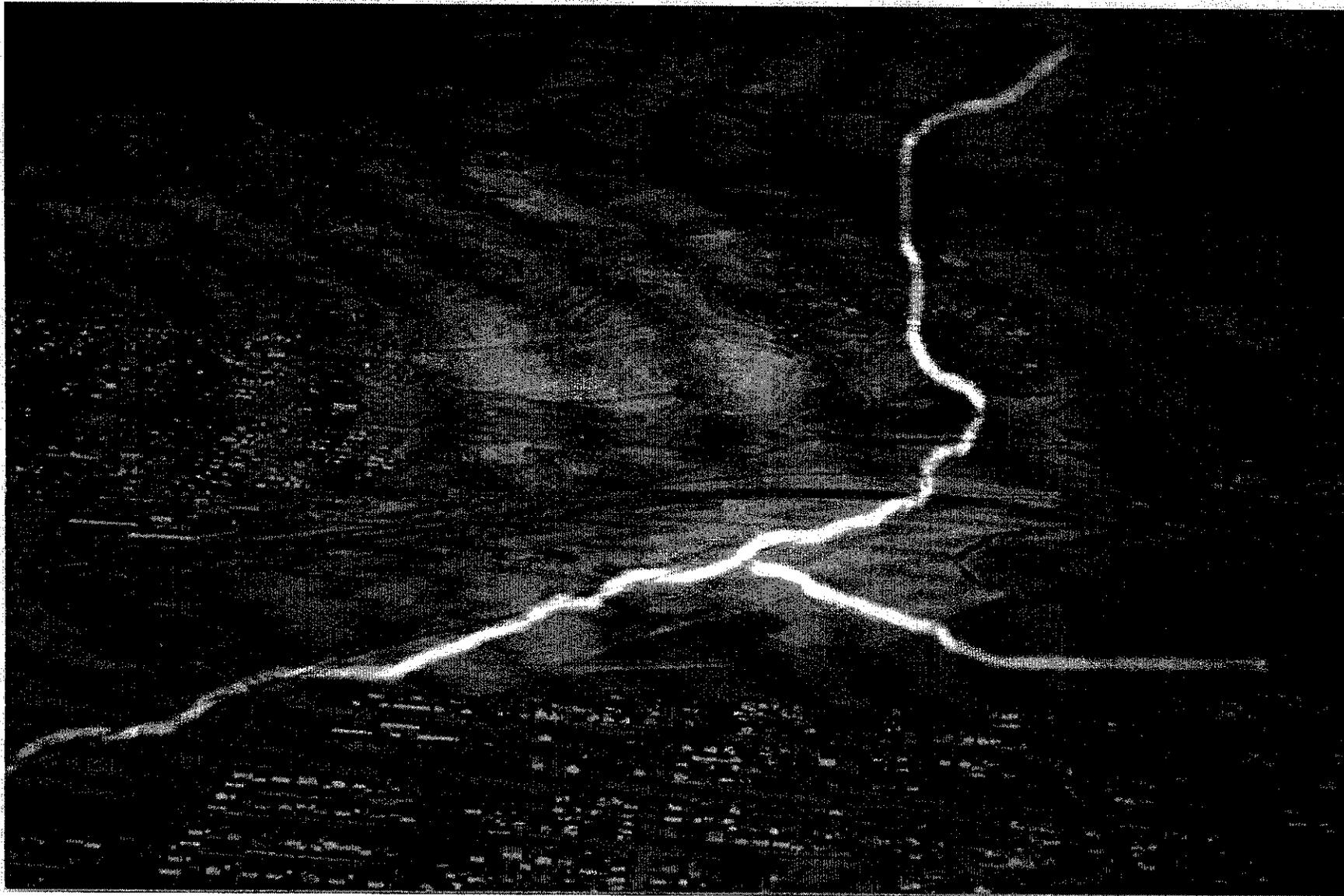
Clark Fork Advisory Council

Silver Bow Creek 1994---Bureau Of Mines Photo
Free Flowing Stream
Prior to the installation of the French Drain.





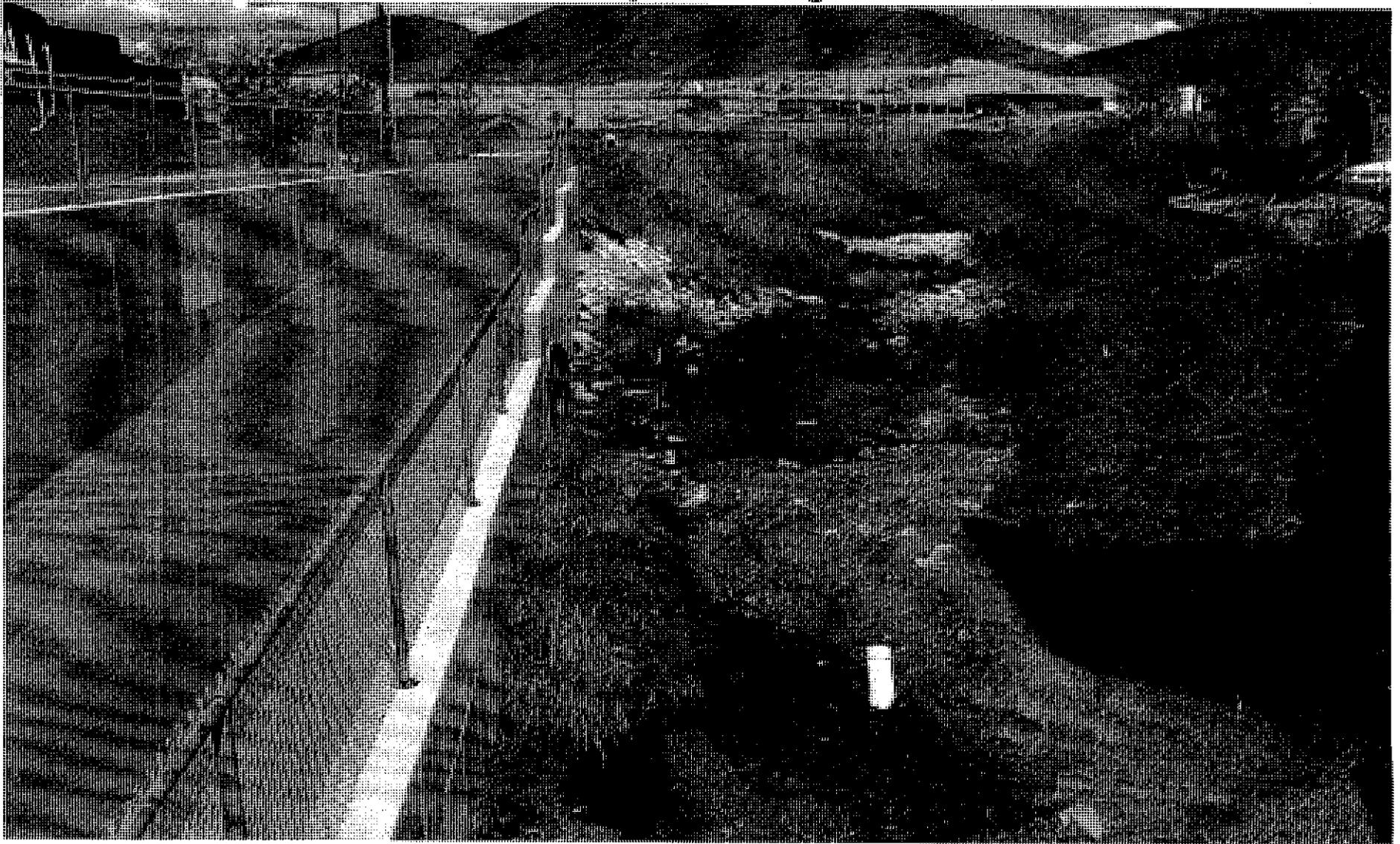
***Outline of Flow of Silver Bow Creek
flowing from North of Meaderville, and Horse Canyon Creek flowing from
the Columbia Gardens and East Ridge. Adapted from 1959 Anaconda
Company Photo***



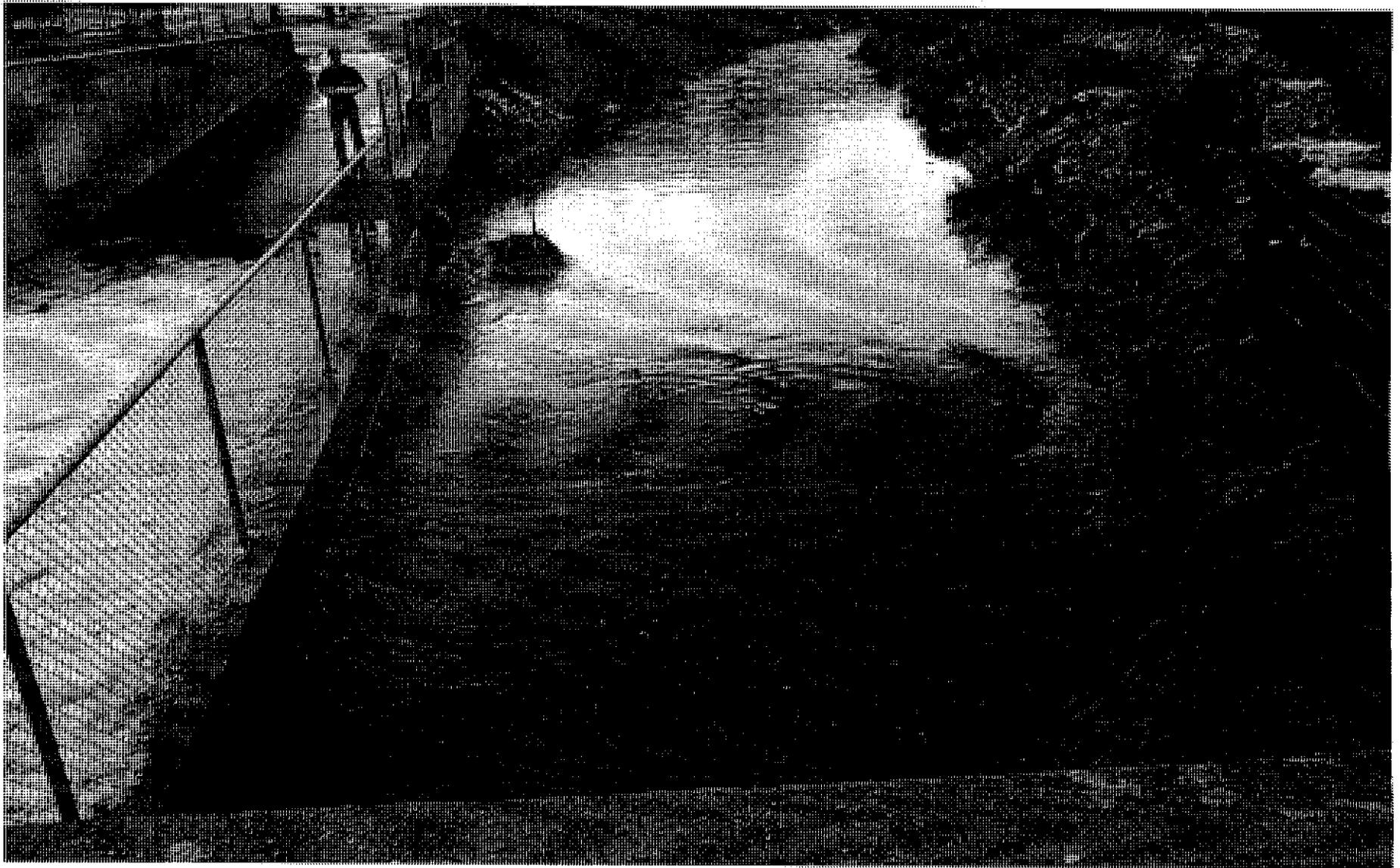
Silver Bow Creek Next to the Civic Center on Harrison Avenue

Looking East---County Shops in the background, located on Parrott Tailings

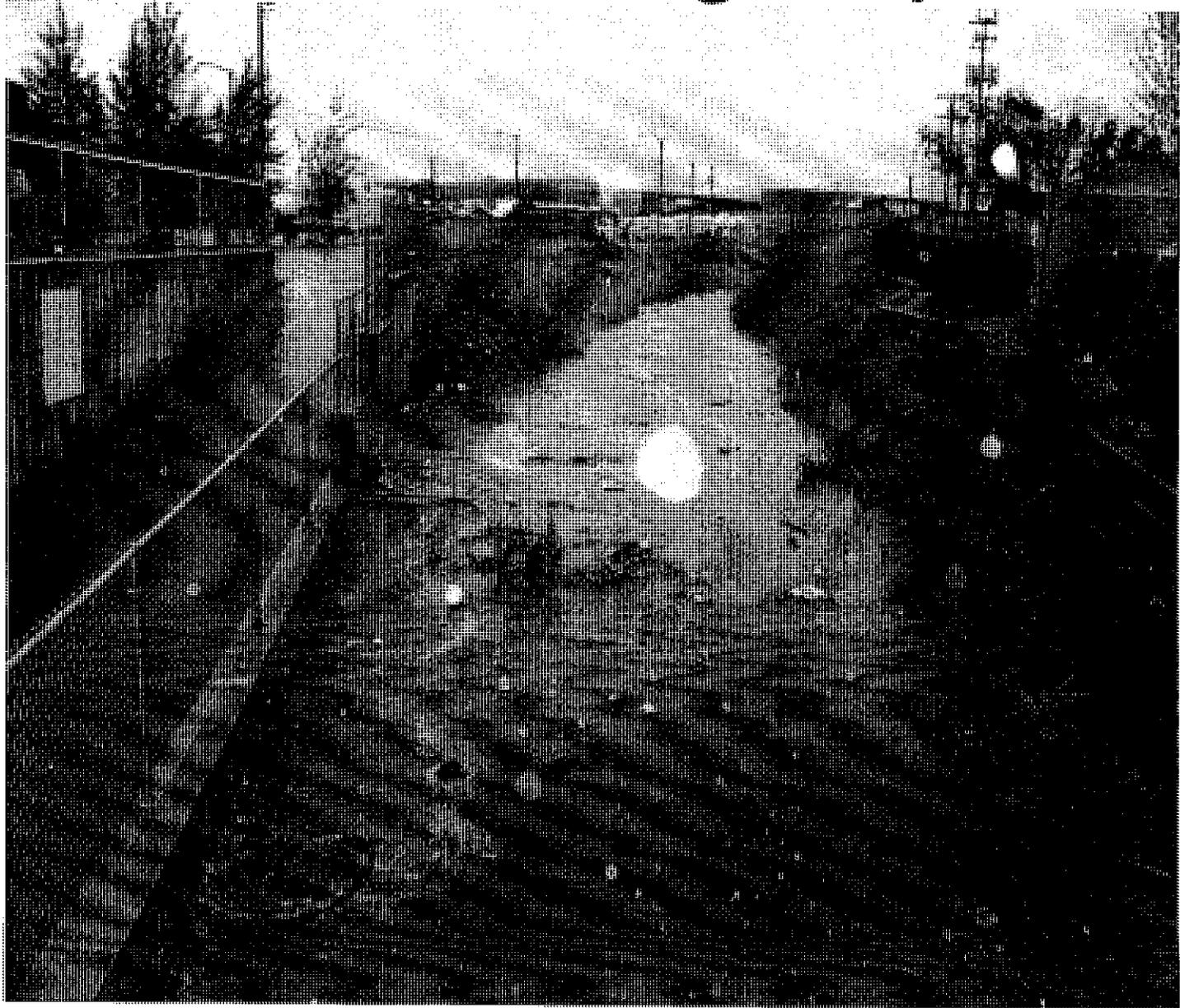
Note pipe in creek, used for cleaning Reverse French Drain



Storm Water Flowing in Silver Bow Creek under Harrison Avenue, August 8, 2009



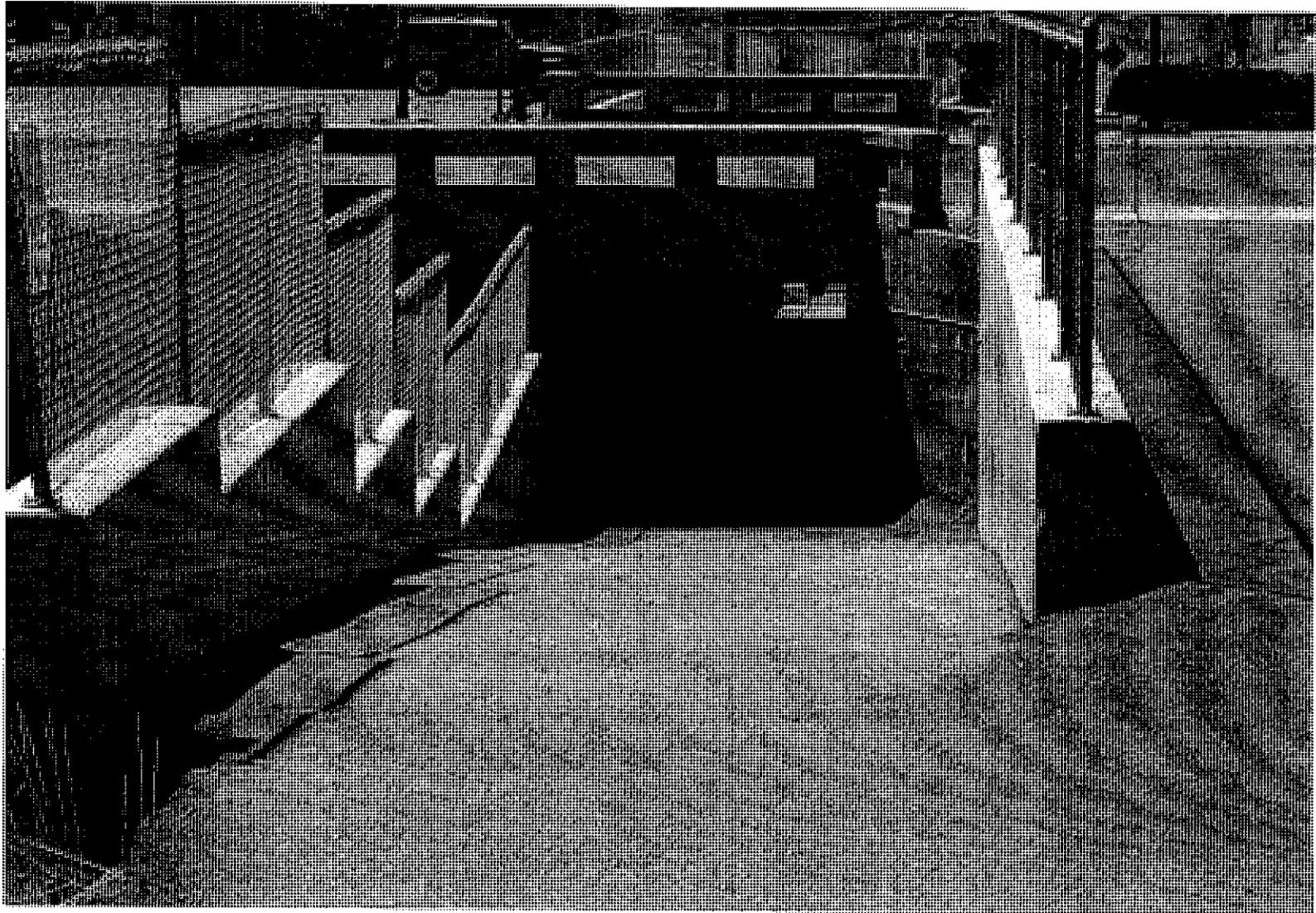
Silver Bow Creek---August 1, 2013



***Storm Water Flowing in Silver Bow Creek under
Harrison Avenue, June 14, 2010***



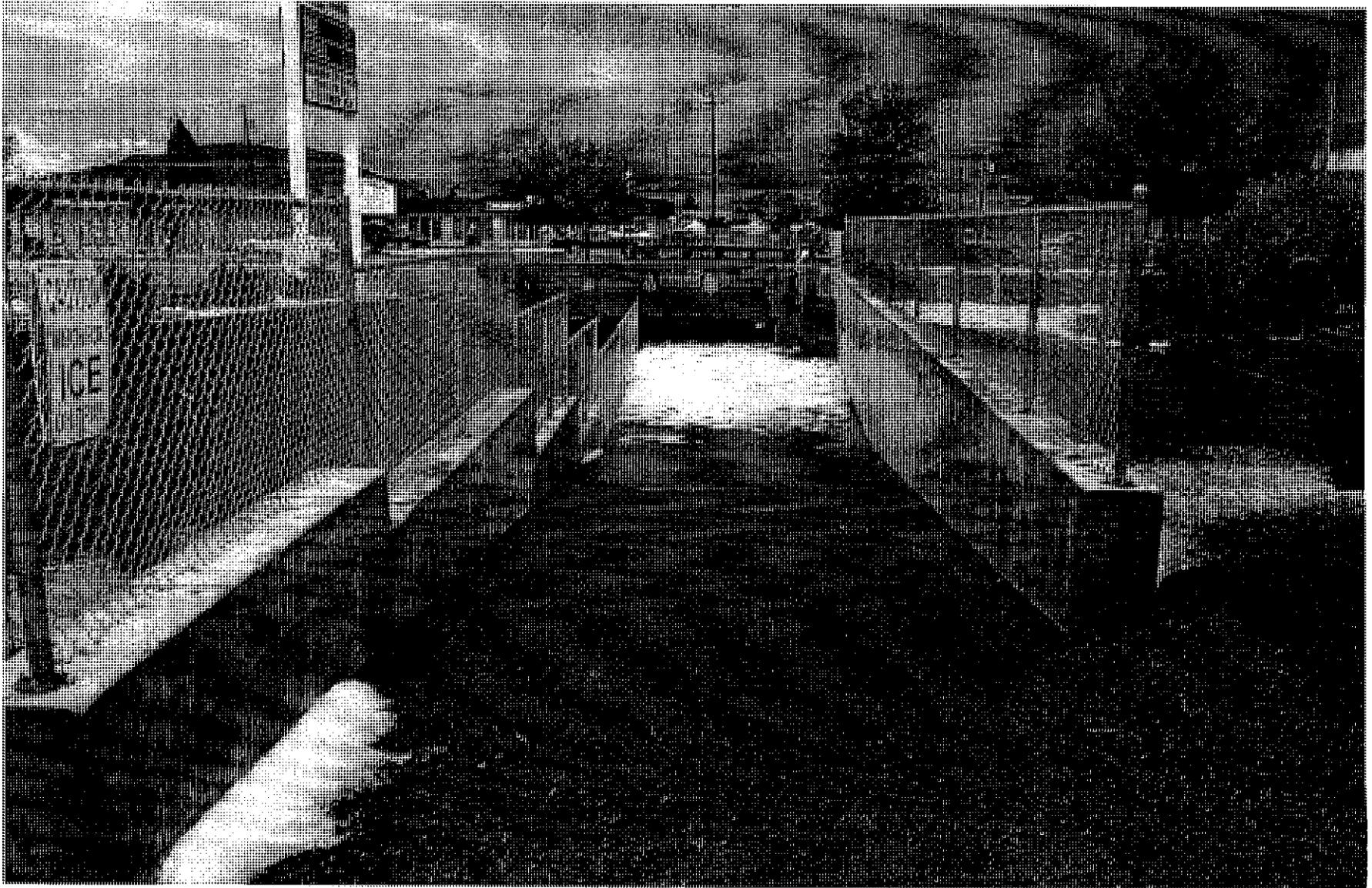
Walkway for Silver Bow Creek under Harrison Avenue



Walkway for Silver Bow Creek under Harrison Ave.

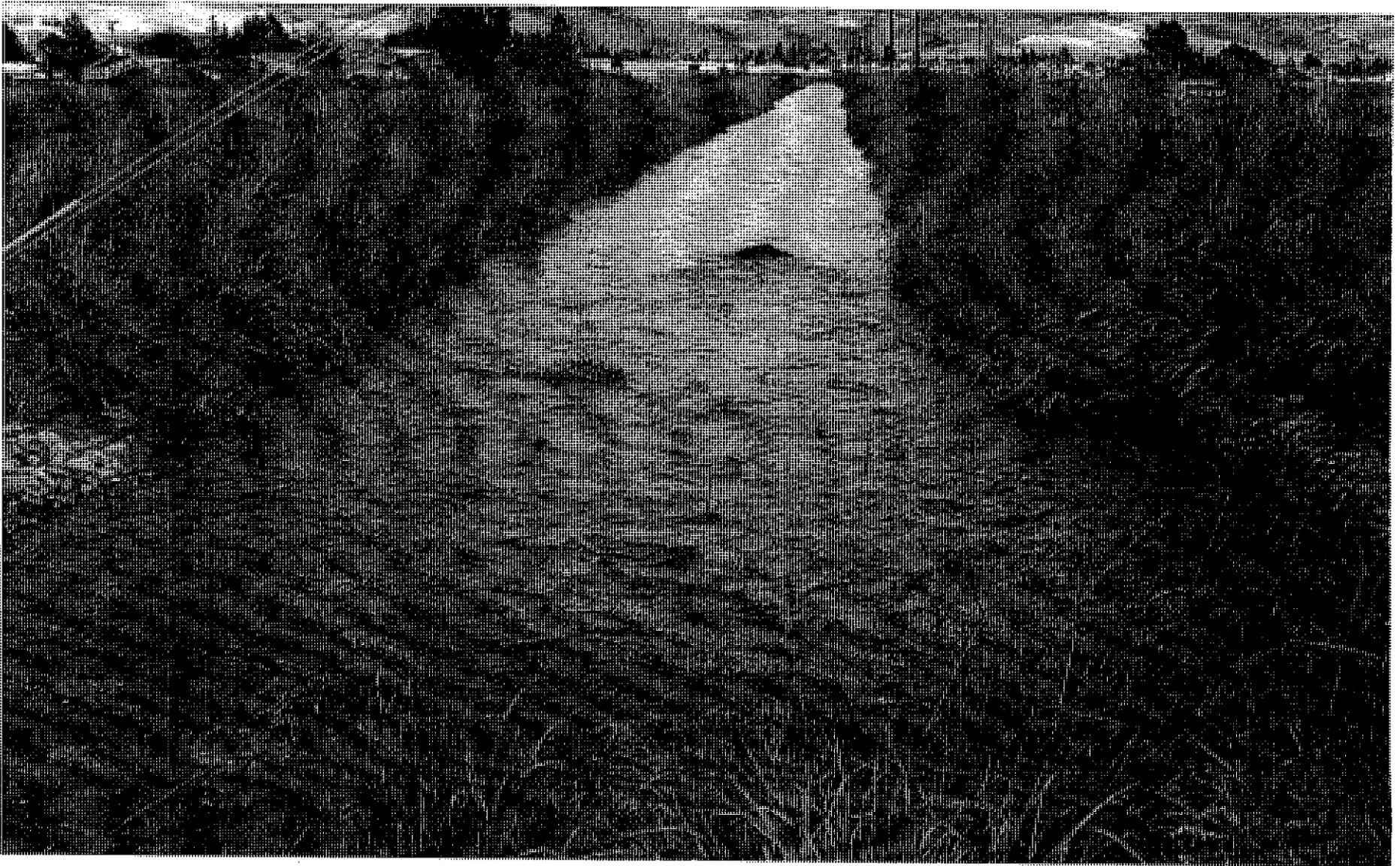
Totally plugged by storm water on August 9,2009

Required several weeks of pumping to clear walkway because of groundwater flowing into system

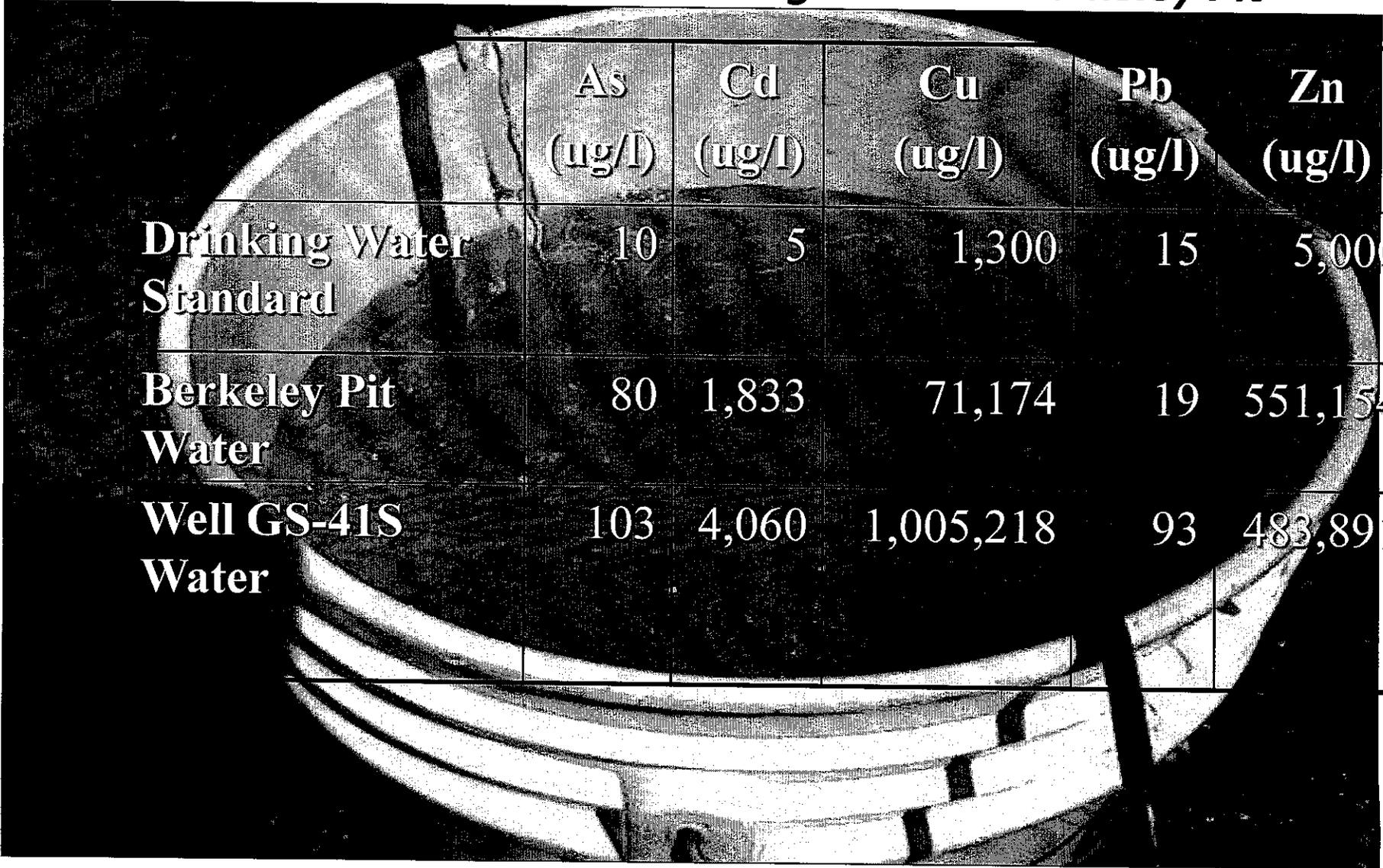


***Storm Water Flowing from George Street to Kaw Avenue from storm
on August 8, 2009***

This is an area where groundwater continually flows to the Creek.



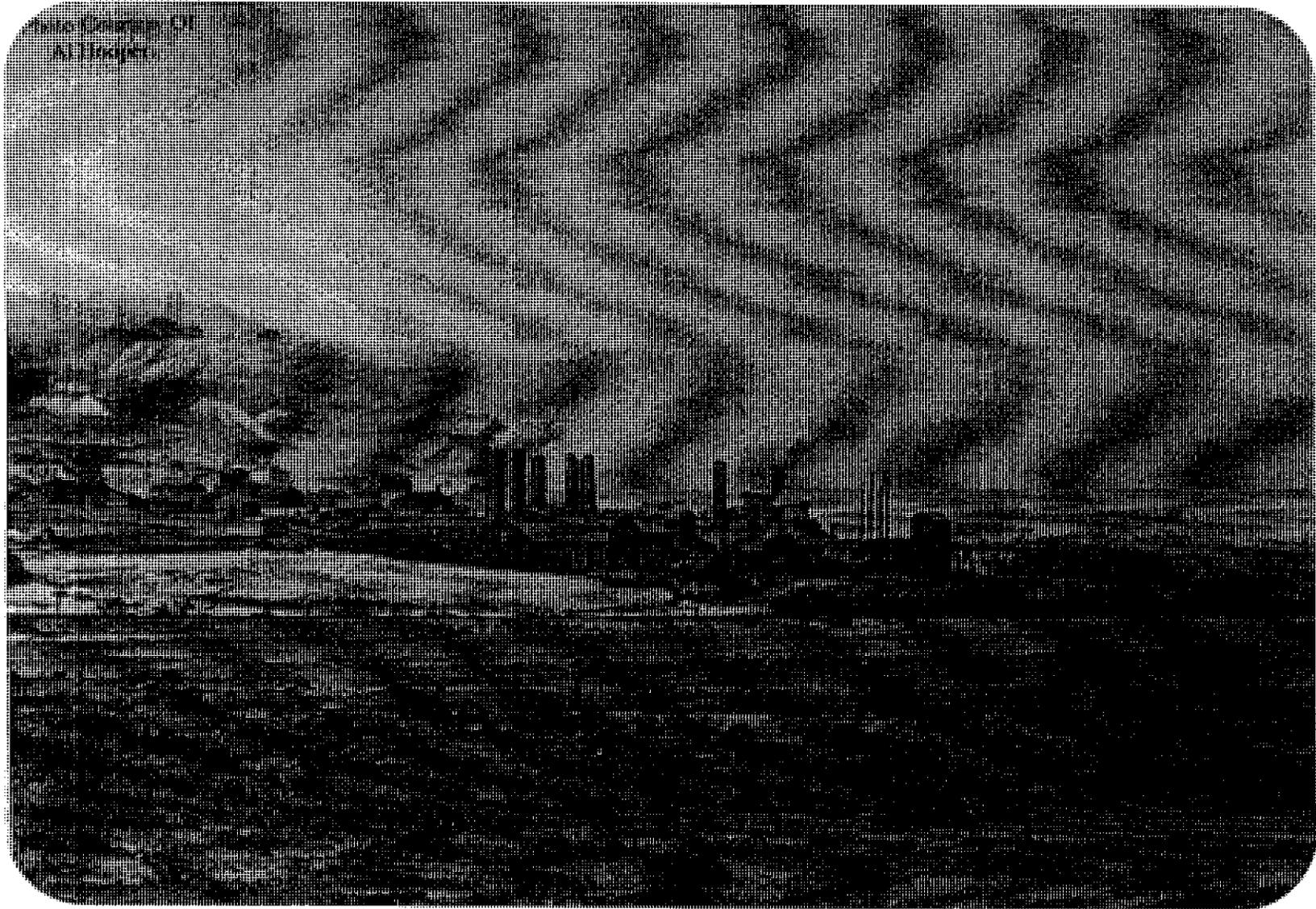
This slide was prepared by Pat Cunneen of the Natural Resource Damage Program and shows a comparison of water extracted from the Parrott Tailings and the Berkeley Pit



	As (ug/l)	Cd (ug/l)	Cu (ug/l)	Pb (ug/l)	Zn (ug/l)
Drinking Water Standard	10	5	1,300	15	5,000
Berkeley Pit Water	80	1,833	71,174	19	551,154
Well GS-41S Water	103	4,060	1,005,218	93	483,891

The Parrott Smelter

Why is Silver Bow Creek so contaminated? The Parrott Smelter was located on Silver Bow Creek in the Butte Civic Center Area. Waste from the Smelter was deposited directly into Silver Bow Creek. In addition, massive amounts of contaminated tailings were deposited along Silver Bow Creek from smelter operations. Through surface and groundwater flow these contaminated tailings contributed significantly to the contamination of Silver Bow Creek and the Clark Fork River.



Coleman, Kathleen

From: Tom Bowler <mttombp@charter.net>
Sent: Sunday, February 21, 2016 10:21 AM
To: Natural Resource Damage Program
Subject: Allotment of "Excess" SBC restoration dollars

Hello,

I would like to comment on the subject of distributing "excess" funds acquired in the natural resource damage lawsuit which the State Of Montana was forced to litigate against the Atlantic Richfield Company, to simply have the clean and healthful environment dictated in the Montana State Constitution.

In my view, none of the money should have been allocated to remedy, period. The responsible parties should have been compelled to clean up the damage on their own budget, and all the money sorely won in the lawsuit should have gone to betterment of the western Montana environment, not repair to something approaching what it once was. Instead, the money had to be used to do major removals of mine waste to attain a stream that lived up to the natural condition it had prior to the destruction caused by negligent mining activities. The money had to be used to do the correct kinds of clean-up action as opposed to the asinine sort of proposals such as in-situ vitrification of tailings, which would then be left on the stream bank.

Now we are being asked to either live with new asinine "mitigation" actions such as leaving major bodies of clearly quantified mine waste within the heart of the Butte community — allowing it to remain a perpetual threat to downstream remedies and restorations for which we were previously compelled to apply our funds to fixing; or alternatively, once again applying our punitive damages to doing something about it ourselves. A PRP continues to allow mine waste and it's by products to flow through our municipal storm water system, across our city streets, and into the Upper Clark Fork drainage and nothing, at all, is done to get the responsible party to act on that environmental crime. If illegal storm water were going into a stream in Spokane, or Denver, or any other US city would the situation be allowed to persist as it does in Butte. Would any of those cities have storm run-off with as harmful an effect as the storm water in Butte. If I were found to be pouring something down the storm drain to impact the environment, would I be allowed to continue, or would the folks with guns and badges show up, slap me in cuffs and rather roughly tell me to cease and desist.

My understanding of the intent of the NRD lawsuit was to reimburse the people of Montana for the money that they were out-of-pocket for the century of additional costs incurred by the public due to the resource lost. My first hand experience, my eye witness testimony, verifies that was a sound and just basis for litigation. Since the restoration work has begun on Silver Bow Creek, I have personally been able to view, and photograph fish in Silver Bow Creek — an act that I previously had to drive all over the state spending my own funds to attempt. I have personally witnessed Bald Eagles along the SBC corridor with frequency; and more so, have witnessed a Bald Eagle with a fish, and one catching a fish directly from Silver Bow Creek. Acts that I would previously have had to travel far afield from Butte, spending my own dollars to experience. I have seen large herds of Elk(plural) gathering in the terrestrial areas proximate to Silver Bow Creek, which I never witnessed previous to the restoration work along SBC. Once, more, I personally would have had to expend my own resources to travel to a place like Gardiner, Montana to see a herd of elk in the heart of town as the recent elk wintering in the Silver Bow Industrial Park have been doing. I have on more than one occasion witnessed groups of four, and five large mule deer bucks living along the banks of Silver Bow Creek in the middle of Butte — again, a sight I have not often seen even in the wild areas of Montana outside the most pristine wildlife areas. This experience, too, was achieved without me spending an additional dime on gas, lunch, or vehicle wear due to the success achieved by the NRD lawsuit. EXACTLY as the basis of the lawsuit said. Of course this all came about because the funds won in the lawsuit went to make repairs of mining damage, when ARCo should have been forced to make the repairs, and our money used to bolster environmental conditions in western Montana -- as our reimbursements for all the decades when

I, and others could not see a Bald Eagle catch a fish without driving to Yellowstone Park. For when Elk could not browse on vegetation along SBC and had to do so in a rancher's field.

Arco also raised the specter of the municipal sewage impacts on Silver Bow Creek in the NRD lawsuit, a condition which the local taxpayers have now expended many millions of dollars to mitigate. Other folks are spending a great deal of money for the privilege of having a dog in this environmental fight. Money is being spent to improve potable water distribution, irrigation impacts, alternative mining and industrial impacts on both the Clark Fork Watershed and watersheds east of the divide. Some of the work coming from NRD money help, other from widely varying alternative sources. ALL the efforts kicking in a little bit to improving the wholistic environment and allowing limited resources to be more harmoniously allocated. With so many others cooperating, contributing, and compromising on so many fronts — why are a select few allowed to play slick and slide by in their obligations the to citizens. If irrigators have to limit their water application and impact their livelihood, fishermen have to reduce their fishing, lawn waterers have to cease their lawn watering (while paying the exact same fee) to insure the water resources are viable, how come polluters are allowed to leave a defined and demonstrated danger to the scarce Montana Water resources in place. How much more useable water would we have if all parties did what was required. Are we going to wait until currently available water resources are insufficient for basic needs to get around to doing something.

In the final analysis, I feel that the foundation of the NRD litigation was absolute sound, and has been verified by outcomes. Other parties have thrown a shoulder to the wheel and made positive, measurable impacts — both directly through the result of the NRD action, and as complimentary actions dovetailed to that. The NRD lawsuit has become a force multiplier in many respects. Large scale threats to the environment remain, and those responsible are not made to address them. Please tell me with all of the ongoing dangers to the western Montana environment that remain, how we can even refer to “excess” funds with a straight face. Everything that I see indicates we still do not have nearly enough funds to act on the known issues, to say nothing of what still may come up. How much would Arco have expended through the private sector to make amends to Montana, rather than sub-contracting out their responsibility to have underpaid, under appreciated, over achieving public sector staffs cover their hind end getting the jobs done that have been.

The excess funds referenced ought to be placed in trust for the time being, and we need to step back and take a deep breath, reevaluating what is going on. Those who are responsible for remaining major environmental threats in Butte, and elsewhere in Montana — need to be held accountable for making corrections, in an expeditious time frame. I hear far too often from folks in the present environmental work “That will be something for others to deal with long after we are retired.” I see far too much money going to nonsensical overhead costs, rather than the folks with the shovels, seeders, wildlife counting equipment, and range health activities who make an actual, beneficial impact. I very strongly feel anything referred to as excess funds ought to be treated like the coal trust fund, be set aside for a time, and a serious review of the current condition and past practice be evaluated and our fire adjusted to land on the target with far fewer long and short rounds being thrown wastefully down range. Also, i feel our “allies” or as sometimes self defined partners in responsible reclamation ought to be called upon to contribute their fair share to this war. We also need to start getting people involved in this picture who have the attitude, “What awesome legacy are we going to leave, instead of, what are we leaving for others to struggle with while we are soaking it up in the Bahamas.”

Tom Bowler
735 W Broadway
Butte, Montana 59701
(406) 723-8406
mttomb@charter.net

**DEQ Response to
Greenway Service
District letter**



April 29, 2016

Mr. Doug Martin
Natural Resource Damage Program
P.O. Box 201425
Helena, Mt 59620-1425

Response to NRDP for inclusion in UCFRB Advisory Council Letter Response

Dear Doug,

We received a copy of the Greenway Service District letter, dated March 11, 2016, to the Upper Clark Fork Restoration Board Advisory Council and Staff, and Natural Resource Damage Program (NRDP) regarding updating of NRDP Restoration Plans. Within that letter were questions regarding the recent transfer of funds from Department of Environmental Quality's (DEQ) Streamside Tailings (SST) Project to the NRDP, and the funds remaining with DEQ's SST project, and specifically questions about institutional controls (ICs).

Institutional controls are being developed for the Streamside Tailings Operable Unit (SSTOU) during state fiscal year (SFY) 2017 and will mirror interim institutional controls already in-place that protect the remedy. In general, ICs are administrative mechanisms put in place to protect a remedy. For most of the SST project, once vegetation is established and Silver Bow Creek is re-established into the channel constructed during remediation extraordinary institutional controls will not be required. The design of the reconstructed channel anticipates flood events and does assume that major weather events could change the channel alignment. Those events are expected to occur and changes to the alignment are not anticipated to be corrected.

It is anticipated that most institutional controls will focus on limiting access to remedial action areas until bank vegetation and overbank areas have stabilized. ICs may define or exclude certain future uses; including actions that could be taken by a land owner that are in contradiction with the need to protect the remedy. As the majority of deleterious materials have been removed, ICs will necessarily be limited.

For long term project cost estimation it is assumed that over the next few years the final remedial action report will be developed, construction "punch" lists will be checked off, and the Institutional Control Implementation and Assurance Plan (ICIAP) will be developed. The ICIAP will discuss annual and periodic activities, record keeping necessary to support the ICs selected, long term monitoring requirements, inspections and enforcement. Known key actions expected to be included in the O&M plan are weed spraying throughout the year, analytical sampling, performance monitoring, reporting of results and regular briefings with regulatory stakeholders. Additionally, five year reviews will be conducted throughout the life of the project.

It is also anticipated that while the remediation effort settles in there will be limited amounts of field action to be taken in the first five years after the construction phase ends in SFY 2017. After that, the creek will do what creeks do, and with the offending materials excavated and moved off site we expect that the remedy remains protective and functioning as planned.

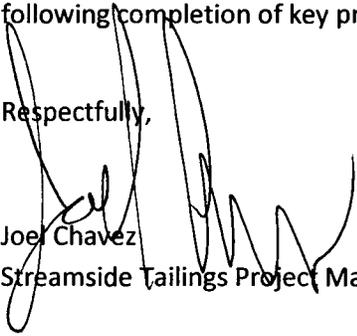
At present our concerns focus on precluding future uses that might destabilize banks, actions or activities that limit the development of vegetation, or cause an unanticipated diversion of water that might lead to undo erosion of the remedial action, including land use control. While the much of the visible work is completed, there are still important actions to be taken.

As such, the questions provided by the Greenway Service District cannot be completely answered at this time; however we have included responses for your use.

1. Does the evaluation of the SSTOU remainder include the funds necessary to establish a formal institutional Controls Monitoring and Maintenance (ICMM) plan for the long term management and maintenance of the SSTOU Remedy? *Yes, based upon best professional judgement.*
2. If so, what specific elements and costs were considered in the proposed corridor management program and the ICMM? *As specific elements of the ICIAP are not defined, an item by item cost estimate would be premature, general categories were applied to the cost estimate.*
3. Does this estimate include funds for operations, management and maintenance of the Silver Bow Creek Greenway? *ICIAP cost would be limited to administrative and legal actions necessary to protect the remedy.*
4. When will the NRDP and DEQ consult with the two affected counties (Anaconda-Deer Lodge and Butte-Silver Bow, MT) or the GSD (the organization created by the counties to plan, design, construct and operate the Silver Bow Creek greenway, funded by UCFRB restoration grants), collectively the organizations responsible for implementing the site-wide ICs per the ROD? *As stated in the ROD, the state will be coordinating with the agencies, including those listed, to develop the institutional controls necessary to protect the remedy, as implemented, as specified to in the Record of Decision.*

Following completion of construction activities and development of the ICIAP, DEQ will again conduct a periodic review the remaining funds to determine which, if any, can be returned to the NRDP as stipulated. We anticipate the next evaluation in the next few years (possible late 2018 or 2019) following completion of key project actions. Please let me know if you require additional input,

Respectfully,


Joel Chavez
Streamside Tailings Project Manager

cc: copy cc list from Greenway Letter

Expense Category	Expense	Notes	Projected Butte CFWEP Expenses 7/1/14 - 6/30/15	Projected Butte CFWEP Expenses 7/1/15 - 6/30/16	Projected Missoula CFWEP Expenses 7/1/14 - 6/30/15	Projected Missoula CFWEP Expenses 7/1/15 - 6/30/16
Salary & Wages						
	Program Director	55% FTE	\$ 30,025	\$ 30,925		
	Field Coordinator	70% FTE	\$ 26,720	\$ 27,522		
	Program Coordinator	50% FTE	\$ 15,926	\$ 16,404		
	Communications Coordinator	40% FTE	\$ 17,259	\$ 17,776		
	Curriculum Coordinator	18% FTE	\$ 8,052	\$ 8,293		
	Institute Director	5% FTE	\$ 3,525	\$ 3,630		
	Institute Budget Coordinator	20% FTE	\$ 6,916	\$ 7,124		
	Student Assistants (2 students 20 hrs/wk)	\$9/hr x 40 hours/week for 9 months	\$ 12,960	\$ 12,960		
	Student Assistants (1 student 40 hrs/wk)	\$9/hr x 40 hours/week for 3 months	\$ 5,040	\$ 5,040		
	Total		\$ 126,422	\$ 129,675		
Fringe Benefits						
	Contracted Professional	46%	\$ 46,693	\$ 48,093		
	Classified Staff	57%	\$ 3,942	\$ 4,061		
	Students AY	3%	\$ 389	\$ 389		
	Students Summer	10%	\$ 504	\$ 504		
	Total		\$ 51,528	\$ 53,047		
Contracted Services						
	Contract to Missoula CFWEP				\$ 162,838	\$ 168,510
	School district busing for fieldtrips	\$250/bus x 35 fieldtrips	\$ 8,750	\$ 8,750		
	Substitute teachers	\$100/day x 35 fieldtrips	\$ 3,500	\$ 3,500		
	Printing		\$ 3,000	\$ 3,000		
	Total		\$ 15,250.00	\$ 15,250.00	\$ 162,838	\$ 168,510
Supplies & Materials						
	Field Monitoring supplies	upgrade, repair, purchase	\$ 5,000	\$ 5,000		
	Workshop supplies		\$ 1,250	\$ 1,250		
	Referene materials		\$ 250	\$ 250		
	Office supplies		\$ 2,000	\$ 2,000		
	Total		\$ 8,500	\$ 8,500		
Commucations						
	Postage and mailings		\$ 500	\$ 500		

Expense Category	Expense	Notes	Projected Butte CFWEP Expenses 7/1/14 - 6/30/15	Projected Butte CFWEP Expenses 7/1/15 - 6/30/16	Projected Missoula CFWEP Expenses 7/1/14 - 6/30/15	Projected Missoula CFWEP Expenses 7/1/15 - 6/30/16
	Media/advertising		\$ 1,000	\$ 1,000		
	Long-distance telephone		\$ 500	\$ 500		
	Total		\$ 2,000	\$ 2,000		
Travel						
	School administration/partnership visits	4.5 per month x 150 miles/trip x 12 months	\$ 4,941	\$ 4,941		
	Overnight accommodations	8 nights @ \$90/night	\$ 720	\$ 720		
	Workshops/classroomms/fieldtrips	25 field trips x 2 vehicles x 75 miles/trip	\$ 2,288	\$ 2,288		
	Personnel per diem for field trips	25 field trips x 2 people x \$11 day	\$ 550	\$ 550		
	Total		\$ 8,499	\$ 8,499		
Other/Miscellaneous						
	Webiste		\$ 200	\$ 200		
	Conference Registrations	MEA-MFT, MEEA, etc.	\$ 1,500	\$ 1,500		
	Total		\$ 1,700	\$ 1,700		
Total Direct Costs - Butte CFWEP			\$ 213,898	\$ 218,670		
Total Direct Costs - Missoula CFWEP					\$ 162,838	\$ 168,510
Indirect Costs		20% of direct costs	\$ 42,780	\$ 43,734		
Indirect Costs		5% of direct costs	\$ 8,142	\$ 8,426		
TOTAL			\$ 264,820	\$ 270,829	\$ 162,838	\$ 168,510
		Total Budget 14-15	\$ 427,657			
		Total Budget 15-16	\$ 439,340			

\$23/per day