

DEPARTMENT OF JUSTICE
NATURAL RESOURCE DAMAGE PROGRAM



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December 8, 2021

Mr. Nikia Greene
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10 W. 15th St.
Helena, MT 59626

Ms. Erin Agee, counsel
U.S. EPA Region 8
1595 Wynkoop Street
Denver, CO 80202

Re: State of Montana Natural Resource Damage Program Comments on Future EPA Decisions that Could Impact Cost and Implementability of Constructing the Blacktail Creek Remedial Action within the BPSOU CD

Dear Mr. Greene and Ms. Agee:

The State of Montana Natural Resource Damage Program wants to make EPA aware of issues it has identified and is concerned with which relate to EPA's Remedial Investigation of the West Side Soils Operable Unit and the remedial planning process for implementation of the Butte Priority Soils Operable Unit Consent Decree (BPSOU CD). Our concerns are narrow and focused. They relate solely to restoration funds, the effectiveness of the groundwater remedy which the State of Montana through the Natural Resource Damage Program has invested more than \$36M to address, and costs under the BPSOU CD. We provide these comments now to allow EPA time to address any conflicts that may exist before decisions are made.

We would like to ensure that:

- A) the remedial work on Blacktail Creek Site (BTC Site) being performed by the Montana Department of Environmental Quality is implemented as cost-effectively as possible. This is important because all the remaining funds from that effort (except for the \$1 million commitment to Butte-Silver Bow,

per Memorandum of Understanding 2020-260, dated October 8, 2020), are intended to be available for restoration actions, as is specifically provided in Paragraph 21 of the BPSOU CD. The State is committed to providing a cost effective and fully protective remedy with the settlement funds;

- B) there are no additional costs incurred by the State from potential impacts from the remedial activities (referred to as the “BTC Riparian Actions” in the BPSOU CD) on downstream sites, primarily the Butte Reduction Works Smelter Site Remedial Action (BRW Site); and
- C) any project sequencing decisions made by EPA will not undermine or impact the BPSOU Surface Water Management Plan, Sediment Performance Monitoring (Exhibit 1 to Attachment A to Appendix D to the CD, Section 5). This sediment monitoring will evaluate the effectiveness of British Petroleum-Atlantic Richfield’s (BP-AR’s) groundwater capture systems at the BTC Site and the BRW Site to protect Silver Bow Creek and Blacktail Creek instream sediments and surface water from the existing contaminated groundwater discharge.

Issue 1:

NRDP and DEQ have documented and quantified over the last 15 years that instream sediments of Blacktail Creek within BPSOU and directly upstream of the BTC Site are contaminated with historic mine wastes. The State has collected this data to monitor the progress of the remedy and restoration of the Streamside Tailings Operable Unit (SSTOU) and while NRDP was investigating the contamination at the Blacktail Creek Site in 2015 - 2017. The most robust of these instream sediment quality sampling efforts on Blacktail Creek was performed by NRDP in 2016 (Attachment A).

There are instream sediment samples in Blacktail Creek in the West Side Soils Operable Unit (WSSOU) upstream of the BTC Site that exceed the BPSOU CD Surface Water Management Plan Table 8-1 for copper by 3 times (451 mg/kg) and zinc (Attachment A., Table 1). This contamination is part of the WSSOU and not the BPSOU.

Our understanding is that EPA is the lead for WSSOU, storm water, and Blacktail Creek in this area of WSSOU. If that is correct, what is the plan to address this waste source, pathway, and ultimately sequencing issue to make sure these wastes do not recontaminate the BTC Site and ultimately the corridor if left unaddressed? How does EPA plan to distinguish upstream contamination when considering the effectiveness of the groundwater capture system(s)?

Issue 2:

BP-AR has been clear in design meetings that it would like to construct the Butte Reduction Works Smelter Site (BRW Site) as its first major construction project following construction of a small sedimentation basin at Grove Gulch.

Constructing a downstream project that involves removing the entire creek bed, banks, and floodplain before upstream projects that involve removing wastes from the entire floodplain on a fluvial system such as this poses a significant risk of downstream recontamination. There are instream sediment samples in the BTC Site that exceed the BPSOU CD Surface Water Management Plan removal criteria for copper by 39 times (5,890 mg/kg) and zinc by 14 times (6,510 mg/kg) (Attachment A, and Table 1).

If EPA allows BP-AR to construct the BRW Site before the BTC Site, Diggings East Stormwater treatment basin or other upstream projects are constructed and recontamination of the BRW Site sediment occurs (as would be expected), it creates confusion about the source of the contamination. Although the consequences of this confusion would require a careful review of the BPSOU CD, we see two likely results. First, it could be difficult or impossible to determine that the Butte Reduction Works Smelter Area Mine Waste Remediation and Contaminated Groundwater Hydraulic Control portion of the required remedy is complete, because not all of the contaminated sediments would be removed in the BRW area. Second, it would make it difficult to determine whether the BRW Contaminated Groundwater Hydraulic Control is functioning and whether BP-AR has adequately controlled discharge of contaminated groundwater to surface water and sediments in BPSOU, as required by Attachment C to Appendix D of the BPSOU CD.

Recontamination from upstream projects is likely regardless of when the BTC Site construction occurs. Instream sediment contamination from the BTC Site will transport to the BRW Site every year regardless of when construction occurs (Attachment B). Also, this situation should not preclude the full utilization of the Surface Water Management Plan instream sediment performance triggers for evaluating the effectiveness of BP-AR groundwater capture system specifically at the BRW Site (Table 1).

Issue 3:

The BTC groundwater capture system that BP-AR is required to construct should be fully functional prior to the State's construction of the BTC Riparian Actions (Attachment B). If the BTC Riparian Actions are constructed prior to this groundwater control, contaminated groundwater could recontaminate the instream sediments. BP-AR has recently acknowledged this sequencing necessity in its latest schedule, as is required by Exhibit 1 to Appendix D of the BPSOU CD. We thought it prudent to restate it here.

Issue 4:

It is clear from the attached figures that the Digging East Stormwater Basin (DESB) (Attachment D) and Buffalo Gulch Stormwater Basin (Attachment C) will both need to be constructed and functioning prior to the State's BTC Riparian Actions work. Without these capture and treatment systems in place, contaminated sediments would continue to be transported by Silver Bow Creek above the confluence to the BTC Site, specifically the confluence area. Clearly, as in other cases,

these upstream historic mine waste contaminant sources and pathways need to be addressed prior to implementation of downstream waste removal projects.

Issue 5:

Paragraph 35 of the BPSOU CD states that “AR will take the State’s BTC Riparian Actions construction de-watering water at the Butte Treatment Lagoons to the extent treatment is needed and at times when the volume and chemistry of such water will not overwhelm the Butte Treatment Lagoons’ capacity and/or prevent it from meeting discharge standards, as approved by EPA during Remedial Design.” Consistent with this provision, the BTC Riparian Actions must be scheduled at a time when there is BTL capacity and it is not being used for the other remedial actions, so that BP-AR is able to take all BTC Riparian Action dewatering water that requires treatment.

In summary, sequencing of the various BPSOU remedial projects is of critical importance and if done incorrectly could potentially recontaminate downstream BPSOU sites. This also applies to Blacktail Creek contamination within West Side Soils OU. These sources/pathways could negatively impact the cost of the BTC Site remedial work and the funds remaining for restoration purposes.

Please let me know if you have any further questions or would like to meet to discuss these concerns in further detail.

Sincerely,



Jim Ford
Natural Resource Damage Program
Montana Department of Justice

cc:

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Mave Gasaway; attorney for AR
Gary Icopini; MBMG
David Shanight, CDM Smith
Curt Coover, CDM Smith
Chapin Storrar; CDM Smith
Ian Magruder; CTEC

References:

Tetra Tech, **Data Gap Investigation - Silver Bow Creek and Blacktail Creek Corridors**, July 21, 2016

RESPEC, **Monitoring Report for 2020 Streamside Tailings Operable Unit Silver Bow Creek/Butte Area NPL Site**, Prepared for MDEQ and MDJ/NRDP

BPSOU Surface Water Management Plan Exhibit 1 to Attachment A to Appendix D to the Consent Decree

Table 1

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

Table 8-1. Probable Effect Concentrations for Sediment (Ingersoll *et al.* 2000, MacDonald *et al.* 2000)

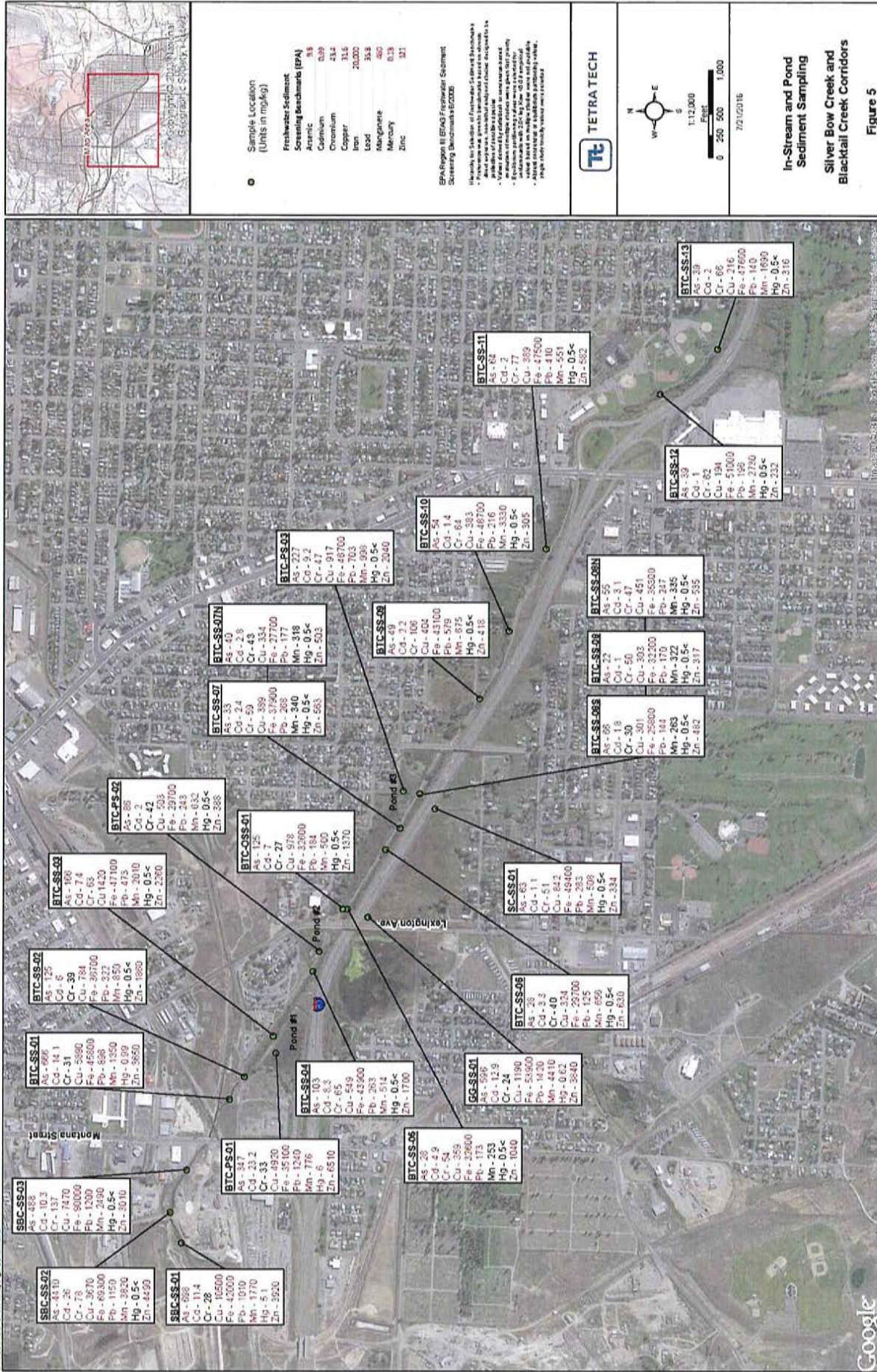
Contaminant of Concern	Probable Effect Concentration (mg/kg, dry weight, bulk sample)
Arsenic	33
Cadmium	4.98
Copper	149
Lead	128
Mercury	1.06
Zinc	459

mg/kg – milligram per kilogram

Table 9-1. SWMP Lines of Evidence for Additional Groundwater Hydraulic Control

Medium	Metric	Criteria
Monitoring		
Sediment	Bulk sample (<2mm) contaminant concentrations	Probable Effects Concentrations (PECs, Table 8-1). Exceedance of PECs will be considered a “sediment deviation” and will trigger a preliminary diagnostic investigation and quarterly sediment monitoring unless the contaminated sediment is removed.
Surface Water (Normal Flow)	Contaminant concentrations	Surface water compliance exceedances during normal flow will trigger a diagnostic evaluation.
Diagnostic Response Investigation		
Sediment	Bulk sample (<2mm) contaminant concentrations	Statistically significant trends of quarterly COC concentrations per depth interval, that indicate sediments will continue to exceed PECs as a result of contaminated GW discharge.
Surface Water (Normal Flow)	Contaminant concentrations	Statistical trends or significant differences of contaminant concentrations between adjacent performance monitoring stations
Groundwater	Hydraulic gradient	Interpret groundwater gradient between surface water and adjacent groundwater to determine the potential for contaminated groundwater to impact surface water and sediment quality
Groundwater	Contaminant concentrations	Document groundwater COC concentrations adjacent to surface water areas of evaluation and the potential for contaminated groundwater to impact surface water and sediments quality.
Pore Water	Contaminant concentrations	Interpret contaminant concentrations from within the hyporheic zone to inform potential source of contamination.

Attachment A



Attachment B

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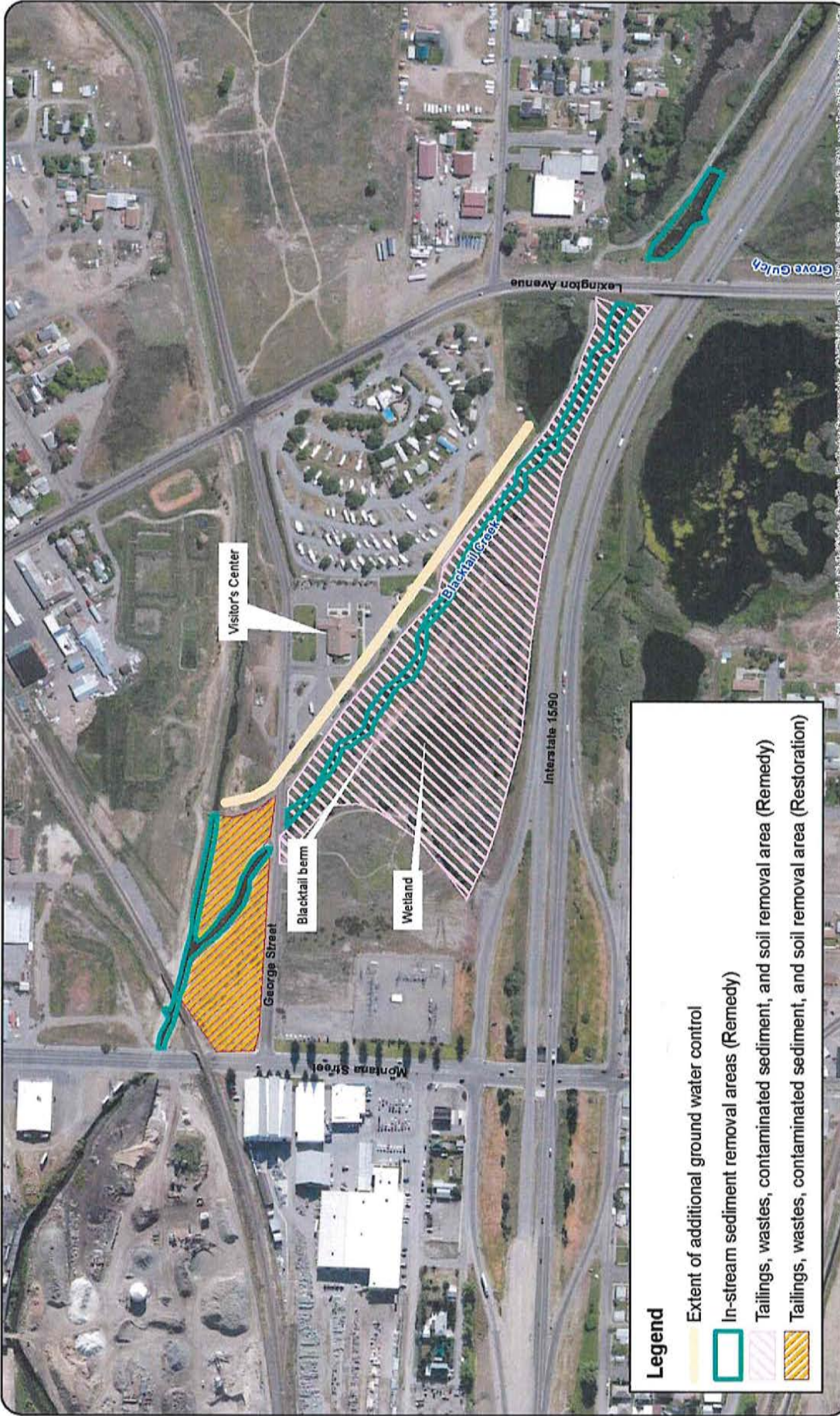
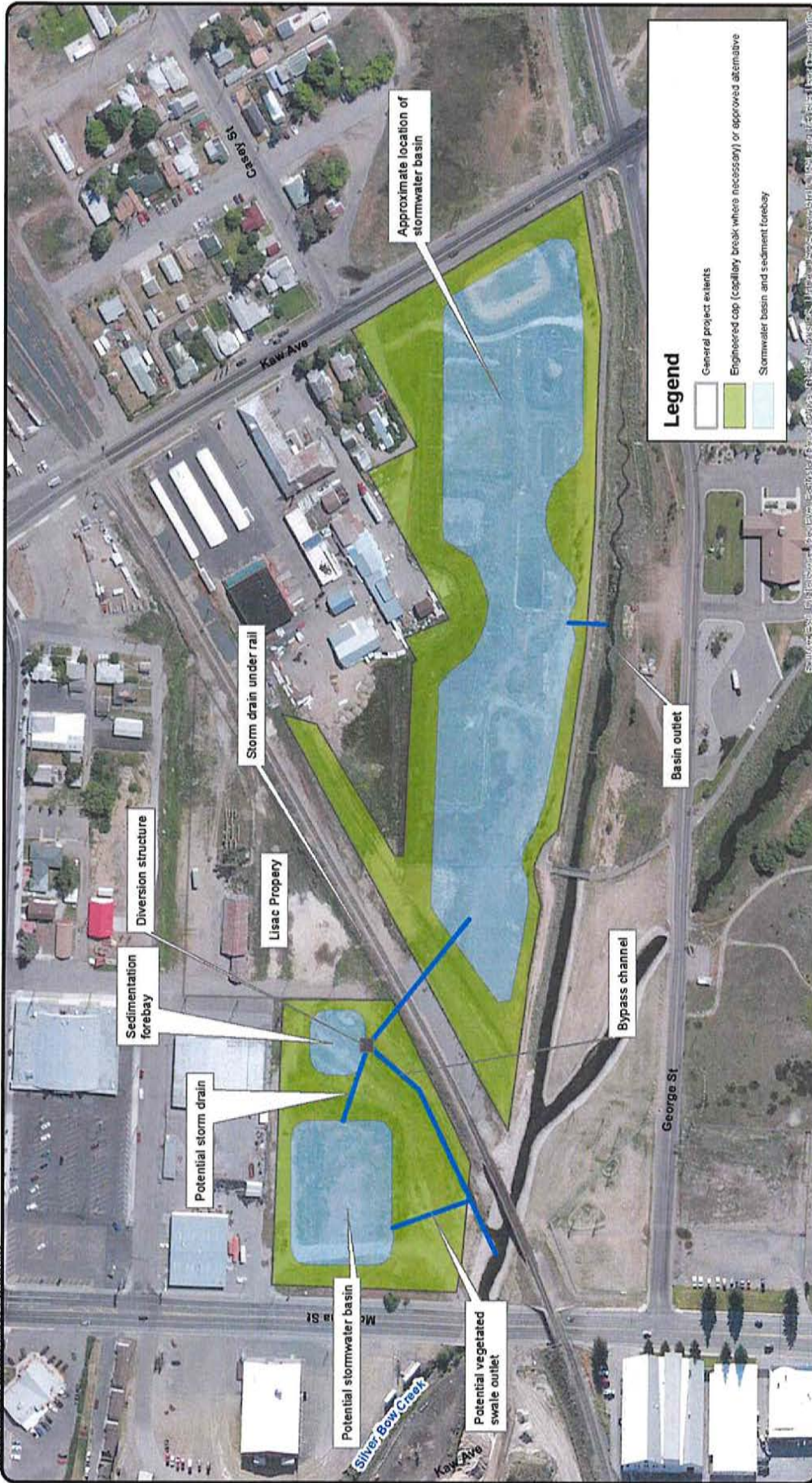


Figure BTC-1
Blacktail Creek
Remedial Action Plan

Conceptual
Features, boundaries, and areas indicated are conceptual.

Attachment C



Conceptual
Features, boundaries, and areas indicated are conceptual.

Figure BG-1
Buffalo Gulch
Remedial Action Plan

Attachment D



Conceptual
Features, boundaries, and areas indicated are conceptual.

Figure DE-1
Digging East
Remedial Action Plan