

MS4 Introduction

- Ordinance Highlights
 - Objectives & definitions provide BSB with legal authority to require storm water controls
 - Lists permit requirements and defines review times
 - Establishes Engineering Standards
 - Prohibits illegal discharges/illicit connections
 - Established a Storm Water Utility Fund

MS4 Introduction

- Outfall
 - means a physical location where these conveyance structures discharge pollutants of storm water into surface water or where they leave the boundary of the designated MS4. The term does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances that connect segments of the same stream or other surface waters and that are used to convey surface waters.
 - 72 in Butte MS4 Boundary
- Storm Water Runoff
 - Transported through BSB storm sewer system and discharges untreated into receiving waters
 - Fuel
 - Sediment
 - Wastewater
 - Pollutants

Best Practices

- Need ideas of what you want this section to look like
- Non-structural BMP means any institutional and pollution prevention practice designed to prevent or minimize pollutants from entering runoff. They do not involve fixed permanent facilities and typically consist of changing behavior through administrative regulation, persuasion, and/or economic means.
- Structural BMP means any stationary or permanent BMP that is designed, constructed, and operated to prevent or reduce the discharge of pollutants to storm water.



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New Permit Term Changes

The following are the revisions to the General Permit for Storm
Water Discharges Associated with Small MS4s.

Permit Changes - Summarized

- Minimum Control Measures (MCMs) 1 & 2: Public education, outreach, involvement, and participation
 - Minimum of one opportunity annually for the public to provide comments on the SWMP
 - Identify four applicable key target audiences to address through education and outreach
 - One outreach strategy for each applicable key target audience Two outreach strategies active at minimum
 - Maintain records on selected key target audiences, etc. Use information to direct education and outreach resources effectively, document in the SWMP

Permit Changes - Summarized

- MCM 3: Illicit Discharge Detection and Elimination
 - Increased verbiage defining high priority outfalls (b.ii.)
 - *The permittee must identify a minimum number of high priority outfalls not equaling zero, based on the knowledge of potential illicit discharges in their MS4. High priority outfalls shall be reviewed and updated annually.*
 - List non-storm water discharges that are significant and non significant contributors of pollutants (a.ii)
 - *Include the pollutants associated with each illicit discharge, and any local controls or conditions placed on these discharges.*

Permit Changes - Summarized

- MCM 5: Post-Construction Site Storm Water Management
 - Assess and document existing ordinances, policies, programs, and studies to identify whether the following LID concepts (both structural and non-structural BMPs) have been implemented to promote protection of storm water runoff quality associated with new and redevelopment projects:
 - Directing growth to identified areas
 - Protecting sensitive areas such as wetlands and riparian areas
 - Maintaining and/or increasing open space
 - Providing buffers along sensitive water bodies
 - Minimizing impervious surfaces
 - Minimizing disturbance of soils and vegetation

By the end of the third year of the permit cycle, develop and submit a plan to modify relevant codes, ordinances, policies, and programs to implement LID/green infrastructure concepts, or provide justification why implementation is not feasible. The plan shall include, but is not limited to, the preventative actions identified above that have not yet been implemented.

Permit Changes - Summarized

- Monitoring and Reporting Requirements
 - Permittees will establish a network of at least four monitoring locations with at least one location representing a predominantly commercial and/or industrial area and at least one location representing a predominantly residential area. One monitoring location may be upstream, outside the MS4 boundary to evaluate water quality entering the MS4.
 - Monitoring Frequency (6c.) removed from old permit
 - If a permittee fails to obtain the required sample for a six-month monitoring period, the permittee may request to replace the monitoring location outfall with appropriate rationale prior to the next calendar year. The Department must **approve** such requests prior to replacing a monitoring location. The new, approved outfall monitoring location will be identified with an unused outfall name/number. The permittee may not request to replace approved replacement monitoring locations again during the same permit cycle.

Permit Changes - Summarized

- New TMDLs with MS4 Approved WLAs
 - Assumptions and Actions: Percent reduction allocations and WLAs are not intended to add load limits to the permit. When the storm water system is activated, WLAs are met by adhering to the permit requirements to minimize pollutant loads. Additionally, the Superfund site has the goal of meeting water quality targets in Silver Bow Creek with direction from the CERCLA program. Monitoring data should continue to be evaluated to assess BMP performance, help determine where additional BMPs may be necessary, and implement an adaptive management approach to minimize pollutant loads. As required by the permit, an illicit discharge detection and elimination program is necessary to achieve the WLA for nutrients.

Permit Changes - Summarized

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B. Training

The permittee is required to conduct and/or coordinate, at a minimum, the following trainings and document applicable personnel participation. All new hires that fall into the categories below (section II.B.1-4) with potential to impact storm water pollutant contributions must receive the equivalent amount of the following training within 90 days of their hire date.

1. Storm Water Management Team

1st Year of Permit Term: Conduct comprehensive training for all members of the storm water management team to educate them about permit updates and implementation responsibilities for the upcoming permit term.

2. Construction Site Personnel

At a minimum of once during the permit term, conduct Construction Site Storm Water Pollution Prevention Plan (SWPPP) training for personnel, including inspectors and plan reviewers, responsible for the implementation of the Construction Site Storm Water Management Minimum Measure (MCM 4). Training shall include, at a minimum, inspection protocol and implementation of the MS4's ERP.

3. Post-Construction Site Personnel

At a minimum of once during the permit term, conduct plan review and stormwater facility inspection training for all personnel responsible for the implementation of the Post-Construction Site Storm Water Management Minimum Measure (MCM 5). Inspector training shall include, at a minimum, inspection protocol and implementation of the MS4's ERP.

4. Field and Facility Personnel

1st and 4th years of Permit Term: Conduct field and facility training for MS4 personnel responsible for completing work activities with storm water pollution potential. This shall include any staff or field crews subject to oversight through SOPs as part of the Pollution Prevention and Good Housekeeping Minimum Measure (MCM 6). The training must provide, at a minimum, education regarding the following:

- An overview of this permit and the requirements contained herein.
- Potential storm water impacts.
- The detection and elimination of illicit discharges.
- BMPs necessary to minimize discharges of pollutants during permittee activities or the operation of permittee-owned facilities.
- Any SOP updates completed as a result of the required work under MCM 6.



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Questions?

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**City of Butte Municipal Separate Storm Sewer System (MS4)
Storm Water Management Team (SWMT) Meeting, Q4, 2022
December 13, 2022, 2:00-3:00
Public Works-Conference Room (3rd Floor), Butte, MT**

NAME	ORGANIZATION	Phone #	Email
JP Gallagher	BSB Chief Executive	406-497-6200	jgallagher@bsb.mt.gov
Mark Neary	BSB PW Director	406-497-6519	mneary@bsb.mt.gov
Kyle West	BSB PW Engineering	406-497-6532	kwest@bsb.mt.gov
Dylan Pipinich	BSB Planning Director	406-497-6256	dpipinich@bsb.mt.gov
Zane Gleason	Project Manager/Compliance Specialist	406-497-6518	zdgleson@bsb.mt.gov
John Sullivan	BSB Gov't Buildings Director	406-497-6573	jsullivan@bsb.mt.gov
Bob Lazzari	BSB P & R Director	406-497-6571	blazzari@bsb.mt.gov
Pete Schonsberg	BSB P & R Park Superintendent	406-497-6571	pschonsberg@bsb.mt.gov
Eric Hassler	BSB Reclamation & Environmental Services Director	406-497-5042	ehassler@bsb.mt.gov
Jim Dennehy	BSB Water Treatment Superintendent	406-723-9429	jdennehy@bsb.mt.gov
Tom Loggins	BSB Roads	406-497-6567	tloggins@bsb.mt.gov
Bill Andrene	BSB Metro Sewer	406-497-6553	wandrene@bsb.mt.gov
Justin Thatcher	BSB Metro Maintenance	406-431-2011	jthatcher@bsb.mt.gov
Rayelynn Brandl	CFWEP	406-496-4898	rbrandl@mttech.edu
Josh Vincent	WET	406-723-1534	jvincent@waterenvtech.com
Stephen Coe	WET	406-299-9858	scoe@waterenvtech.com

- 2022 Annual Report**
 - **Compiling**
- 2022 MS4 SWMP Review**
- Questions/Comments**
- Next meeting – Spring 2023**



Stormwater Management Team Meeting, Q4 2022

SWMP Updates

December 13, 2022 | 2:00 pm to 3:00 pm

Name	Department
1. Kyle West	Public Works
2. Mark Neary	Public Works
3. Justin Thatcher	Metro Sewer
4. Bill Andrenig	Metro Treatment
5. Josh Vincent	WET
6. Jim Donnelly	BSB, Water Utility
7. Zane Glessen	Public Works
8. Eric Hester	Dept. of Reclamation
9. J.P. Gallagher	BSB CE Office
10. Dylan Phipps	Planning
11. Melissa Wanamaker	CFWEP
12. Jeffrey Dylan Livingston	WET WET

MS4: Review of Changes for Stormwater Management Plan (SWMP)

Stephen Coe P.E.
Dylan Livingston





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MS4 Introduction

Montana Pollutant Discharge Elimination System (MPDES)
General Permit MTR040000 is a fifth generation Comprehensive
General Permit for stormwater discharges associated with Small
Municipal Separate Storm Sewer Systems (MS4s).

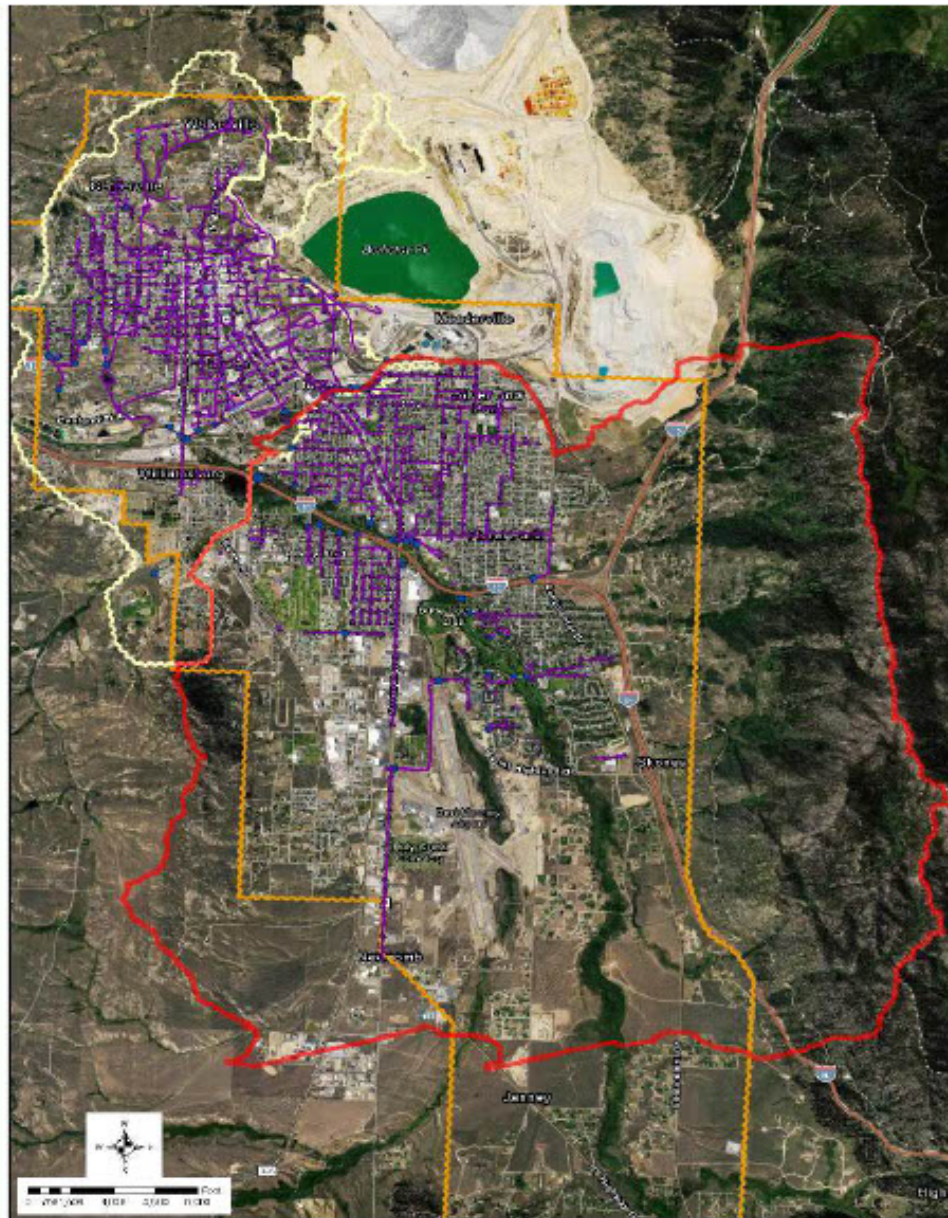
MS4 Introduction

- National Pollutant Discharge Elimination System
 - 1990 cities >100,000 population were required to manage stormwater
 - 1999 cities >10,000 population were required to manage stormwater
 - EPA authorized MDEQ to administer MS4 program in Montana
 - 7 cities, 3 counties, 3 non-traditional permittees
- Receiving Waters of Stormwater
 - Silver Bow Creek
 - Blacktail Creek
 - Sand Creek
 - Basin Creek
 - Grove Gulch Creek

MS4 Introduction

- Butte
 - Traditional MS4
 - Boundary encompasses the entire urban area within the urban limits boundary including the sewer district
 - 29.7 square miles
 - Large network of storm drains, catch basins, retention ponds, ditches and other conveyances
- Superfund Responsibilities
 - Maintenance of Superfund Stormwater Structures (SSWS)
- Additional Permits in MS4 Boundary
 - Metro Sewer: MPDES Effluent Discharge, Multi-Sector General Permit for SW Discharge Assoc. with Industrial Activity
 - Construction Permits over 1-acre

2/22/2023





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A photograph showing the silhouettes of four construction workers on a steel framework of a building under construction. The workers are positioned in the center-left, with their forms dark against a bright, hazy sky at sunset or sunrise. The steel beams and rebar structures are visible throughout the scene.

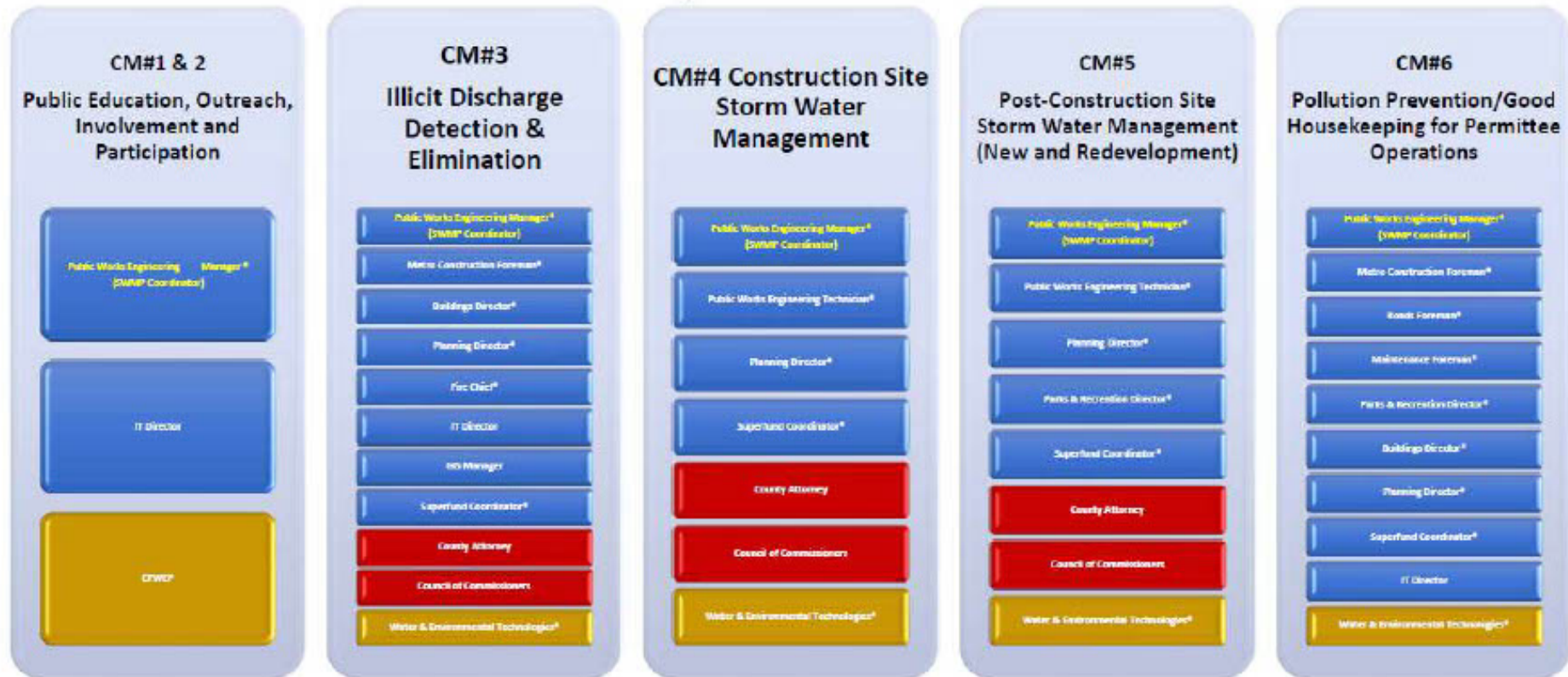
SWMP Introduction

The permittee must develop, document, maintain and implement a SWMP which includes management practices, control techniques, system designs, good standard engineering practices, and such other provisions necessary to reduce the discharge of pollutants from the permitted Small MS4 to the MEP.

SWMP Introduction

- Six Minimum Control Measures (MCMs)
 - Public Education, Outreach, Involvement, and Participation
 - Illicit Discharge Detection & Elimination
 - Construction Site Stormwater Management
 - Post-Construction Site Stormwater in New and Redevelopment
 - Pollution Prevention/Good Housekeeping
- Stormwater Management Team
 - Comprised of persons responsible for implementation of the SWMP
 - Establish, document, and execute formalized mechanisms for regular communication to ensure permit compliance and timely reporting
 - Primary SWMP coordinator followed by Org Chart

Butte-Silver Bow MS4 Stormwater Control Measure Responsibility Organizational Chart



Legend:



* SWMP Team Member

SWMP Introduction

- MDEQ may require changes to the SWMP as needed to:
 - Address impacts on receiving water quality caused, or contributed to, by discharges from the MS4
 - Include more stringent requirements necessary to comply with the new federal statutory or regulatory requirements
 - Include other conditions deemed necessary by the Department to comply with the goals and requirements of the Montana Water Quality Act
 - Update BMPs to improve program effectiveness based on information and/or data submitted in permittee's annual reports

SWMP Design/Overview

- Permit defines and supplies Minimum Control Measures and Required BMPs
 - SWMP has been designed and updated to follow current table of MCMs and BMPs from new permit.
 - Also includes a Due Date and Measurable Goals for each MCM/BMP

Permit No.: MTR046000
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Minimum Measure	Required BMP
1. MCMs 1 and 2: Public Education, Outreach, Involvement, and Participation • Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps the public can take to reduce pollutants in storm water runoff. • Implement a public involvement/participation program to involve key target audiences in the development and implementation of the SWMP that complies with state and local public notice requirements.	
a. Develop and continue to utilize the permittee's storm water website for public involvement.	i. Annually review and update a storm water website that, at a minimum, includes the following: • A copy of, or link to, this General Permit. • A copy of the Notice of Intent application form submitted to DEQ including all supplemental information. • Access to outreach strategy information and materials. • Applicable outreach event information. • Most current version of the SWMP and any supporting documents. • At a minimum, five years of most recent annual reports submitted to DEQ. • A mechanism for providing public input for the SWMP including contact information and directions for comments, questions, and complaints. • Information regarding how to identify and report illicit discharges. • Permittee requirements for construction activities and how to submit related complaints. • The Notice of Intent application form and supplemental application information, the updated General Permit and a maximum of five years of annual reports must be posted on the website within 90 days of the effective dates of this General Permit. ii. Provide a minimum of one opportunity annually for the public to provide comments on the SWMP. Document all relevant input, responses, and SWMP modifications made as a result.

SWMP Changes-Summarized

- Previously BMPs were to be instituted by a set date of permit term. BSB met those during previous permit term and now SWMP requires maintenance and review annually.
- Summary of review and updates provided in Annual Report, due by March 1st of each year
- MCM 1&2 Combined
- MCM 7 Removed – Project Management

MCM Changes - Summarized

- Minimum Control Measures (MCMs) 1 & 2: Public education, outreach, involvement, and participation
 - Minimum of one opportunity annually for the public to provide comments on the SWMP
 - Identify four applicable key target audiences to address through education and outreach
 - One outreach strategy for each applicable key target audience Two outreach strategies active at minimum
 - Maintain records on selected key target audiences, etc. Use information to direct education and outreach resources effectively, document in the SWMP

MCM Changes - Summarized

- MCM 3: Illicit Discharge Detection and Elimination
 - Increased verbiage defining high priority outfalls (b.ii.)
 - *The permittee must identify a minimum number of high priority outfalls not equaling zero, based on the knowledge of potential illicit discharges in their MS4. High priority outfalls shall be reviewed and updated annually.*
 - *BSB has 5 high priority outfalls to be inspected annually*
 - List non-stormwater discharges that are significant and non significant contributors of pollutants (a.ii)
 - *Include the pollutants associated with each illicit discharge, and any local controls or conditions placed on these discharges.*

Example: Non-Stormwater Discharges

MS4 General Permit Part II.A.3.a.i

2021 annual assessment of non-storm water discharge or flows

Significant contributors of pollutants are as follows:

1. Water line flushing/fire hydrant flushing

Why:

Water line flushing and fire hydrant flushing are municipal operations which discharge chlorinated water onto streets and have the potential to mix with oil & grease, sediment, debris, and other pollutants. These non-storm water discharges have the potential to reach area surface waters via municipal storm water system and are allowable if all conditions are met.

Associated pollutants may include:

- Total Suspended Solids (TSS)
- Oil & Grease
- Metals
- Chlorine
- Debris

MCM Changes - Summarized

- MCM 5: Post-Construction Site Stormwater Management
 - Assess and document existing ordinances, policies, programs, and studies to identify whether the following LID concepts (both structural and non-structural BMPs) have been implemented to promote protection of stormwater runoff quality associated with new and redevelopment projects:
 - Directing growth to identified areas
 - Protecting sensitive areas such as wetlands and riparian areas
 - Maintaining and/or increasing open space
 - Providing buffers along sensitive water bodies
 - Minimizing impervious surfaces
 - Minimizing disturbance of soils and vegetation

By the end of the third year of the permit cycle, develop and submit a plan to modify relevant codes, ordinances, policies, and programs to implement LID/green infrastructure concepts, or provide justification why implementation is not feasible. The plan shall include, but is not limited to, the preventative actions identified above that have not yet been implemented.

Training Requirements - Summarized

Permit No.: MTR040000
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B. Training

The permittee is required to conduct and/or coordinate, at a minimum, the following trainings and document applicable personnel participation. All new hires that fall into the categories below (section II.B.1-4) with potential to impact storm water pollutant contributions must receive the equivalent amount of the following training within 90 days of their hire date.

1. Storm Water Management Team

1st Year of Permit Term: Conduct comprehensive training for all members of the storm water management team to educate them about permit updates and implementation responsibilities for the upcoming permit term.

2. Construction Site Personnel

At a minimum of once during the permit term, conduct Construction Site Storm Water Pollution Prevention Plan (SWPPP) training for personnel, including inspectors and plan reviewers, responsible for the implementation of the Construction Site Storm Water Management Minimum Measure (MCM 4). Training shall include, at a minimum, inspection protocol and implementation of the MS4's ERP.

3. Post-Construction Site Personnel

At a minimum of once during the permit term, conduct plan review and stormwater facility inspection training for all personnel responsible for the implementation of the Post-Construction Site Storm Water Management Minimum Measure (MCM 5). Inspector training shall include, at a minimum, inspection protocol and implementation of the MS4's ERP.

4. Field and Facility Personnel

1st and 4th years of Permit Term: Conduct field and facility training for MS4 personnel responsible for completing work activities with storm water pollution potential. This shall include any staff or field crews subject to oversight through SOPs as part of the Pollution Prevention and Good Housekeeping Minimum Measure (MCM 6). The training must provide, at a minimum, education regarding the following:

- An overview of this permit and the requirements contained herein.
- Potential storm water impacts.
- The detection and elimination of illicit discharges.
- BMPs necessary to minimize discharges of pollutants during permittee activities or the operation of permittee-owned facilities.
- Any SOP updates completed as a result of the required work under MCM 6.

Top-Down Training

- Presentation to be provided to Department Heads/Members of the SWMT to educate field/facility personnel
- *New Hire Paperwork includes SW in BSB document*
- *SWMP available online*
- *Large inventory of information/resources is available for you and your team*
- *Training assistance available*



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Questions?

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THE CITY-COUNTY OF Butte-Silver Bow

STORM WATER IN BUTTE-SILVER BOW

Regulatory Background

The City and County of Butte-Silver Bow (BSB) is covered by a *General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4s)*. In 1972 the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) permit that determined urban runoff was impacting national waterways. In 1990 medium and large cities >100,000 population (like New York City) were required to manage their storm water. Then in 1999, small urban areas >10,000 population had to follow suit. The Environmental Protection Agency (EPA) authorized the Montana Department of Environmental Quality (MDEQ) to administer the MS4 program in our state. Butte, along with 6 other cities (Billings, Missoula, Kalispell, Great Falls, Helena, Bozeman), 3 counties (Yellowstone Co, Cascade Co, Missoula Co) and 3 untraditional permittees (Malmstrom Air Force Base, Montana State University, and the University of Montana) are required to manage their storm water.

Receiving Waters

Butte-Silver Bow has identified the following streams (defined as “receiving waters” in the MS4 permit) within its permit boundary:

- 1.) Silver Bow Creek
- 2.) Blacktail Creek
- 3.) Sand Creek
- 4.) Basin Creek
- 5.) Grove Gulch Creek

All identified receiving waters receive storm water from the BSB storm sewer system; as a result, they must be protected from potential storm water pollutants.

MS4 Program Goals

The overall goal of the MS4 program is to “...*reduce the discharge of pollutants from the permitted Small MS4s to the maximum extent practicable (MEP) to protect water quality...*” Butte complied with this goal by developing a Storm Water Management Program (SWMP). BSB’s SWMP works to reduce pollutants in storm water by addressing six Control Measures:

1. Public Education & Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDDE)



THE CITY-COUNTY OF Butte-Silver Bow

4. Construction Site Storm Water Runoff Control
5. Post-Construction Site Storm Water Runoff Control
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Legal Authority

BSB has legal authority to manage their storm water because in May 2011 the Ordinance No. 10-13 was passed by the BSB Council of Commissioners and Updated in December 2020 with Ordinance No. 2020-06.

Ordinance highlights include:

- Objectives & definitions provide BSB with the legal authority to require storm water controls.
This is important because it provides a way to make the offenders address pollutant discharges.
- Lists permit requirements and defines review times.
This is important because all development projects are required to follow the same set of rules.
- Establishes Engineering Standards.
This is important because engineers need to know what rules to follow.
- Prohibits illegal discharges/illicit connections.
This is important because we do not want wastewater, paint, motor-oil, antifreeze, or concrete wash-out to comeingle with stormwater.
- Established a Storm Water Utility Fund.
This is important because it costs money for infrastructure to ensure our waterways are clean. BSB residents are charged a flat fee of \$15/year per parcel. Commercial and industrial sites are charged a per square-foot fee.

Employee Responsibilities

As a new BSB employee what do you need to know and understand about storm water?

1. Stormwater runoff is transported through the BSB storm sewer system and discharges **untreated** into area receiving waters.
2. If sediment (dirt, soil, road sand, etc.) or pollutants (paint, motor-oil, antifreeze, concrete wash-out) enter the storm system they discharge **directly** into area receiving waters.



THE CITY-COUNTY OF Butte-Silver Bow

3. When streets are flushed without covering the storm inlet, sediment and garbage is transported through BSB storm sewer systems and discharges **untreated** storm water into area receiving waters.
4. When drain inlets are paved over without covering, asphalt accumulates in the bottom of the inlet and makes maintenance difficult, allowing storm water to come in contact with the asphalt and discharges **directly** into area receiving waters.
5. When water leaks are fixed without containing the discharge water, sediment laden water is transported through BSB storm sewer system and discharges **untreated** storm water into area receiving waters.
6. When a construction project disturbs soil and storm water controls and BMP's are not used, sediment laden water gets into the storm drain and discharges **directly** into area receiving waters.

As a new employee of BSB, you are now part of the STORMWATER TEAM. If you have a storm water concern, idea for improvement in your daily work tasks, or if you observe illegal discharges/illicit connection, please contact: Kyle West at (406) 497-6532 or Justin Thatcher at (406) 431-2011.

Help us protect our \$1 Billion (\$1,000,000,000) investment in the restoration of Silver-Bow/Clark Fork corridor.

TO: Mark Neary, Pat Cunneen
FROM: Josh Vincent, Stephen Coe
DATE: 01/11/2022
RE: MS4 Monthly Meeting

1. Workload needs?
2. Contract
3. Sampling
 - Review of Sampling Trends
4. Annual report
5. SWMPT Team Training
6. Other Needs?
7. Next monthly meeting, Tuesday, Feb 8 @ 1:00 @ WET.

TO: Mark Neary
FROM: Josh Vincent, Stephen Coe
DATE: 02/08/2022
RE: MS4 Monthly Meeting

1. Workload needs?
 - Review's
 - Organization – Develop a working spreadsheet to track Construction SW Projects.
 - Inspections?
 -
2. Annual report
 - CFWEP – Annual Report
 - Sediment Control
3. CFWEP Meeting?
4. SWMP Team Training Next Month
 - MS4 Overview and SW basics training.
5. Next monthly meeting, Tuesday, March 8[@] 1:00 @ BSB PW prior to SWMP Team Meeting at 2.

TO: Mark Neary, Kyle West
FROM: Stephen Coe, Dylan Livingston
DATE: 11/10/2022
RE: MS4 Monthly Meeting

1. Inspections

- Outfall Inspections – Completed 20 with BSB
- Construction Inspections – Completed 3 with BSB, BSB also performed some individually
- Need to rank all the sites (high-low risk)
 - Forms 6a and 6b need to complete for each construction project and the inspection frequency needs to be followed.

2. Storm Water Sampling

3. SWMP Update/Review

4. SWMP Team Training (December 13 @ 11:00 at BSB Public Works

5. Next meeting, Tuesday, December 13 @ 10:00 @ BSB Public Works

TO: Mark Neary, Kyle West
FROM: Stephen Coe, Dylan Livingston
DATE: 12/13/2022
RE: MS4 Monthly Meeting

1. Inspections
 - High Priority Inspections
 - Facility Inspections
 - County Shops
 - Civic Center
2. Annual Report Prep
3. Next meeting, Tuesday, January 10th @ 10:00 @ WET.

Appendix J
Permittee Owned Facilities

Comments: New site, BMP's present, no discharges, spills or maintenance of BMP's at this time.

By: Dan Livingston / R/L/S 12/23/2022

Built by [Boris Petrov](#) at [Nuclei Capital](#)

BMP INSPECTIONS MUST BE CONDUCTED QUARTERLY

Inspection Code:
Inspection Results:

Corrective Action Deadline:

12/23/2022
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Asset	Asset Type	Asset category?	Have any safety-related issues occurred since the last inspection?	Explain	Are there any job/CMAs issues at the time of the current inspection?	Explain	Maintenance and/or Corrective Action
Boulding No. 1 (Cementation)	YM	Yes / No	Yes / No		Yes / No		
Boulding No. 2 (JF/GC)	YO	Yes / No	Yes / No		Yes / No		
Boulding No. 3 (cementation)	GM	Yes / No	Yes / No		Yes / No		
Boulding No. 5 (cementation)	GM	Yes / No	Yes / No		Yes / No		
Boulding No. 7 (cementation)	GM	Yes / No	Yes / No		Yes / No		
Boulding No. 8 (Maintenance Road)	GM	Yes / No	Yes / No		Yes / No		
	SPM	Yes / No	Yes / No		Yes / No		
	WMP	Yes / No	Yes / No		Yes / No		
Boulding No. 9 (Blue Wash Machine)	GM	Yes / No	Yes / No		Yes / No		
	WMP	Yes / No	Yes / No		Yes / No		
Truck Wash	GM	Yes / No	Yes / No		Yes / No		
	SPM-Blue Wash Tank	Yes / No	Yes / No		Yes / No		
	SPM-blue wash pump	Yes / No	Yes / No		Yes / No		
	SPM water	Yes / No	Yes / No		Yes / No		
	SPM-WMP Mt	Yes / No	Yes / No		Yes / No		
	WMP	Yes / No	Yes / No		Yes / No		
Gravel	Gravel	Yes / No	Yes / No		Yes / No		
	Gravel	Yes / No	Yes / No		Yes / No		
	Gravel	Yes / No	Yes / No		Yes / No		
	Gravel	Yes / No	Yes / No		Yes / No		

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Table 1. General Population Data

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Comments:

Dumpster
Building E $\rightarrow$ Dumpster / Everyday operations $\rightarrow$ Floor drains / Containment tanks
Building F $\rightarrow$ Equipment Gargel storage / Out-door Storage Facility
De Store Storage $\rightarrow$ Out-door
Building 0
Signs Building $\rightarrow$ GH
Tactical Data storage
Building B $\rightarrow$ mechanics / maintenance shop / Washroom
Admin

Butte-Silver Bow

General Permit for Storm Water Discharges Associated with MS4 MTRB40006

Butte-Silver Bow Civic Center

SITE INSPECTIONS MUST BE CONDUCTED ANNUALLY

Inspection Date:

12/23/2022

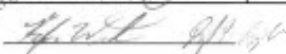
Inspector Initials:

DL, JEW

Area	Vegetation Adequate?	Evidence of Erosion?	Have any spills/discharges occurred since the last inspection?	Evidence of sheen, fouling, odor?	Maintenance and/or corrective action needed
North Parking Lot	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Under construction for Permit renewal
South Parking Lot	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	and filling areas
Lawn	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Glycol Unit	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Sump, floor drains	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 001	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 002	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 003	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 004	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 005	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 006	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 007	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 008	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 009	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	
Outfall 010	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	Yes / No / N/A	

Supervisor Signature

Double to
 inspect
 area w/
 nature of
 construction
 &
 filling
 SWPPP
 Impaction
 at 6:15



Corrective Action Deadline:

01/05/2023
 01/05/2023

Appendix K
Stormwater Management Plan (SWMP)



Butte-Silver Bow MS4 Stormwater Management Plan

Butte, Montana



Prepared for:

Butte-Silver Bow Metro
800 Centennial Road
Butte, Montana 59701

Butte-Silver Bow Public Works
126 West Granite Street
Butte, Montana 59701

December 2022

1 and 2.	PUBLIC EDUCATION, OUTREACH, INVOLVEMENT, AND PARTICIPATION - Implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps the public can take to reduce pollutants in storm water runoff. - Implement a public involvement/participation program to involve key target audiences in the development and implementation of the SWMP that complies with state and local public notice requirements.			
Minimum Measure	Required BMP	Permit Year	Measurable Goal, Responsible Party, Action Items & Deliverables, Resources, and Due Date	
a. Develop and continue to utilize the permittee's storm water website for public involvement.	i. Annually review and update a storm water website that, at a minimum, includes the following: - A copy of, or link to, this General Permit - A copy of the Notice of Intent application form submitted to DEQ including all supplemental information - Access to outreach strategy information and materials - Applicable outreach event information - Most current version of the SWMP and any supporting documents - At a minimum, five years of most recent annual reports submitted to DEQ - A mechanism for providing public input for the SWMP including contact information and directions for comments, questions, and complaints - Information regarding how to identify and report illicit discharges - Permittee requirements for construction activities and how to submit related complaints - The Notice of Intent application form and supplemental application information, the updated General Permit and a minimum of five years of annual reports must be posted on the website within 90 days of the effective dates of this General Permit.	Annually	Measurable Goal: <u>Maintain and advertise the storm water website.</u> Responsible Party: BSB Storm Water Coordinator; BSB Information Technology (IT) Personnel Action Items & Deliverables/Deadline 1. Maintain storm water website. <i>Requirements include: General Permit/link to the MDEQ's webpage containing the permit, access to outreach materials, outreach event information, storm water management program documents and updates, annual reports, a SWMP public input mechanism, information regarding how to identify sources of illicit discharges, NOI application form and supplemental application information; how to report an illicit discharge procedures; permittee construction activities requirements; and how to submit construction project complaints.</i> 2. Advertise storm water website. BSB will notify municipal system users about the storm water website by using a combination of the following media outlets: - Enclosing information in Utility Bills (Water Service), - Advertise in the MT Standard and Butte Weekly, - Advertisements via radio, PSA's, etc., - Promote through social media (Facebook, Twitter, etc.) Resources: - EPA MS4 Permit Information https://www.epa.gov/npdes/stormwater-discharges-municipal-sources/overview - MDEQ MS4 Water Permitting and Operator Assistance Montana DEQ (mt.gov) - EPA Superfund Program website SILVER BOW CREEK/BUTTE AREA Superfund Site Profile Superfund Site Information US EPA - BSB website https://bsbstormwater.org/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026	
	ii. Provide a minimum of one opportunity annually for the public to provide comments on the SWMP. Document all relevant input, responses, and SWMP modifications made as a result.	Annually	Measurable Goal: <u>Develop a mechanism for public comments on the SWMP. Document input, responses and SWMP modifications.</u> Responsible Party: BSB Storm Water Coordinator; BSB Information Technology (IT) Personnel Action Items & Deliverables/Deadline 1. Develop mechanism for public comments to be made. 2. Track, document and implement relevant input, responses and SWMP modifications made as a result. 3. Summarize these in the annual report. Resources: BSB website https://bsbstormwater.org/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026	

b. Determine key target audiences most appropriate for storm water education and outreach.	i. Based on the permittee's local knowledge of storm water pollutant generating activity within their MS4, document which business types and/or residential behaviors from the list below are common sources of pollutants, illicit discharges, spills, and/or dumping within the permitted MS4 boundaries. Select a minimum of four applicable key target audiences to address pollutant generating behavior through storm water education and outreach. Residential Behaviors: • Car Washing/Care • General Common Education • Hazardous Waste Disposal • Home Chemical Care • Lawn & Garden Care • Pet Waste Business Types: • Carpet Cleaning/Restoration Companies • Construction Industry • Gas Stations • Industrial Facilities & Operations • Landscapers • Mobile Cleaning/ Pressure Washing • Post Construction Facility Owners • Restaurant or Food Trucks Note: DEQ may approve or require additional key target audiences. ii. Review key target audiences annually and identify the pollutants associated with each.	Annually	Measurable Goal: <u>Generate a prioritized list of target audiences with description, rationale, and associated pollutants.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Analyze and tally business types and/or residential behaviors (locations) where illicit discharges, spills and dumping are prevalent. <i>List of business types and/or residential behaviors.</i> 2. List key target audiences involved in illegal discharges and improper disposal of waste along with a description and rationale for each selection. <i>List key target audiences with description and rationale.</i> 3. Determine pollutants associated with each target audience. <i>List pollutants for each target audience.</i> 4. Review annually. Resources: • EPA "ECHO" website (https://echo.epa.gov/) to find current Discharge Permit status. • Research industrial businesses without a MDEQ Discharge Permit. • Interview BSB Landfill staff about illegal dumping (prevalence and locations). • BSB Pre-Treatment Surveys/Information Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
c. Identify and develop outreach formats, distribution channels, and messages for each key target audience and associated storm water polluting behavior. Include approaches for involving the public in SWMP development and implementation.	i. For each key target audience, select a minimum of one outreach strategy listed below. At least two outreach strategies must be active. Passive Outreach Strategies: • Advertisements • Brochures/ Fliers • Business Specific Emails • Community Artwork/ Murals • Educational Signage • Informative Articles or Stories • Social Media • Sponsorship of Community Events • Targeted Door Hangers • Utility Bill Inserts • Vehicle Wraps Active Outreach Strategies: • Cleanup Days/ Events • Community Meetings/ Presentation • Community Storm Water Surveys • Form a Citizen Storm Water Advisory Panel • Host AmeriCorps Member • Industry Specific Training • Participation in Community Events	Annually	Measurable Goal: <u>Tailor outreach to key target audiences and storm water polluting behaviors.</u> Responsible Party: BSB Storm Water Coordinator; BSB Information Technology (IT) Personnel Action Items & Deliverables/Deadline: 1. Retain/update formats and distribution channels for messages to target audience and associated storm water polluting behavior. <i>BSB will use outreach formats (i.e., website, newspaper, social media, utility bills, school book covers, bookmarks, radio and TV Public Service Announcements, pet waste containers, billboards) to communicate positive storm water behaviors (i.e., Construction Disturbance Awareness, Only Rain in the Drain, Responsible Pet Waste Disposal, Non-Polluting Behaviors for Events/Festivals, and Resist over fertilizing, etc.). Link outreach messages with existing BSB Superfund Remedy Activities and Operation & Maintenance (O&M) requirements.</i> 2. Provide classroom education for Butte students and public education at festivals, etc. <i>BSB will use educate school children and the public on storm water topics.</i> Resources: • EPA Superfund Program website https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800416 • EPA MS4 Permit Information https://www.epa.gov/npdes/stormwater-discharges-municipal-sources/overview • BSB website https://bsbstormwater.org/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025;

	• Pet Waste Stations • Public Tours • Public Workshops • Rain Garden Adoption/ Building Program • Storm Drain Adoption Program • Student Outreach/ Class Work • Water Quality Monitoring with Citizen Volunteers Note: DEQ may approve or require additional outreach strategies.		December 31, 2026
	ii. Each year, the permittee must implement at least four activities. The activities can be the same or different from year to year. For each key target audience, identify the outreach strategies and planned timeframe for implementation for the upcoming year and include this information in the annual report.	Annually	Measurable Goal: <u>Implement at least four activities to inform, educate and promote correct storm water polluting behavior.</u> Responsible Party BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Identify and market planned activities to be implemented. BSB will distribute advertisements for activities in public buildings (i.e., courthouse, library, schools, and civic center). BSB will use multiple distribution outlets (i.e., website, newspaper, social media, utility bills, school book covers, bookmarks, radio and TV Public Service Announcements, pet waste containers, etc.) to reach key target audiences. Resources: • BSB website https://bsbstormwater.org/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

3.	ILICIT DISCHARGE DETECTION AND ELIMINATION		
	- Develop, implement, and enforce a program to detect and eliminate illicit discharges into the small MS4. - Develop and annually update a storm sewer system map showing the location of all outfalls and the names/locations of all receiving waters. - Through ordinance or other regulatory mechanism to the extent allowable under state or local law, effectively prohibit non-storm water discharges into the MS4 and implement appropriate enforcement procedures and actions. - Develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the MS4. - Inform employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.		
Minimum Measure	Required BMP	Permit Year	Measurable Goal, Responsible Party, Action Items & Deliverables, Resources, and Due Date
a. Identify categories of non-storm water discharges or flows that are significant contributors of pollutants to the MS4.	i. Determine which potential non-storm water discharges or flows to the Small MS4, including but not limited to a consideration of those listed below, are significant contributors of pollutants. Non-Storm Water Discharges or Flows: - Water Line Flushing - Landscape Irrigation - Diverted Stream Flows - Rising Groundwater - Uncontaminated Ground Water Infiltration - Uncontaminated Pumped Ground Water - Discharges from Potable Water Sources - Foundation Drains - Air Conditioning Condensation - Irrigation Water - Springs - Water from Crawl Space Pumps - Footing Drains - Lawn Watering - Individual Residential Car Washing - Flows from Riparian Habitats and Wetlands - Dechlorinated Swimming Pool Discharges - Street Wash Water <i>Note: Discharges or flows from firefighting activities are excluded from the effective prohibition against non-storm water and only need to be addressed where they are identified as significant sources of pollutants to surface waters.</i> ii. In the SWMP, document and update annually: - A list of non-storm water discharges the permittee has identified as significant contributors of pollutants (i.e., illicit discharges). Include the pollutants associated with each illicit discharge, and any local controls or conditions placed on these discharges. - A list of non-storm water discharges the permittee has determined as non-significant contributors of pollutants (i.e., occasional incidental discharges) and will not be addressed as illicit discharges, based on the information available to the permittee. Include the pollutants associated with each type of discharge and any local controls or conditions placed on these discharges.	Annually	Measurable Goal: <u>Evaluate non-storm water discharges or flows present in MS4.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Assess non-storm water discharges and implement local controls as necessary to minimize impacts. BSB will evaluate the Significant Polluters./ 2022, 2023, 2024, 2025, 2026 Resources: EPA MS4 Permit Information https://www.epa.gov/npdes/stormwater-discharges-municipal-sources/overview MDEQ MS4 Water Permitting and Operator Assistance Montana DEQ (mt.gov) Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

b. Inventory storm water sewer infrastructure to track illicit discharges, contain spills, and determine high priority areas.	i. Annually review and update a map of the MS4's storm drainage system to accommodate the provisions of a comprehensive Illicit Discharge Detection and Elimination (IDDE) program and SWMP including, but not limited to, the following: • Outfall locations • Inlets • Open channels • Subsurface conduits/pipes • Dry wells (discharges to ground water directly) • Manholes • Other similar discrete conveyances • Surface waters that receive discharges from outfalls	Annually	Measurable Goal: <u>Update storm water sewer infrastructure map.</u> Responsible Party: BSB Storm Water Coordinator, BSB GIS Department, BSB Metro Sanitary Department Action Items & Deliverables/Deadline: 1. Inventory and update existing infrastructure map. <i>BSB will revise the existing map to include additional or abandoned inlets; open channels; subsurface conduits/pipes; dry wells (discharges to ground water directly); and other similar discrete conveyances. Revise and update infrastructure map to include new storm water infrastructure 2022, 2023, 2024, 2025, 2026</i> Resources: • ARM 17.30.1102(14) 17.30.1102 : DEFINITIONS - Administrative Rules of the State of Montana (mt.gov) Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii. Using inspection and screening results, storm sewer maps, and other appropriate data, list, label, or highlight determined high priority outfalls. When determining high priority outfalls, permittees must consider, at a minimum, the following: • Industrial areas • Areas with previous illicit discharges • Known illegal dumping areas • Oldest portions of storm sewer infrastructure • Areas with onsite sewage disposal systems • Areas discharging to an impaired water body The permittee must identify a minimum number of high priority outfalls not equaling zero, based on the knowledge of potential illicit discharges in their MS4. High priority outfalls shall be reviewed and updated annually. iii. Update the map annually and make available for review by the Department upon request.	Annually	Measurable Goal: <u>Inspect high priority outfalls and document results.</u> Responsible Party: BSB Storm Water Coordinator, BSB Metro Division Action Items & Deliverables/Deadline: 1. Inspect high priority outfalls. <i>BSB will inspect high priority outfalls annually</i> 2. Summarize high priority outfall screening results. <i>BSB will summarize high priority outfalls screening results annually</i> 3. Review high priority map and updated any necessary changes annually. Resources: • Center for Watershed Protection website Home - Center for Watershed Protection (cwp.org) • BSB Outfall Audit Ready Binder Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

c. Develop/update an Illicit Discharge Investigation and Corrective Action Plan to consistently and effectively investigate suspected illicit discharges and connections and track subsequent compliance actions.	i. Maintain and annually update an Illicit Discharge Investigation and Corrective Action Plan. The plan should describe the processes that will be used to locate the source of an illicit discharge and refer to the permittee's Enforcement Response Plan (in Part II.A.2.d.i, below) for execution of appropriate enforcement actions. At a minimum, this plan shall include processes to: - Investigate a suspected illicit discharge within seven calendar days. - Document circumstances that prevent this timeframe. - Prioritize illicit discharges suspected of being sanitary sewage and/or significantly contaminated for investigation first. - Confirmed illicit discharges must be eliminated within a timeframe of six months from the date of discovery. Where applicable, document circumstances that prevent this timeframe. - Notify Montana DEQ and appropriate agencies of illicit discharges believed to be an immediate threat to human health or the environment. - Document that a good faith effort was made to find the source of the illicit discharge and document each phase of the investigation in a case file. - Resolve and document the conclusion of all investigations. The outfall where any illicit discharge is detected shall continue to be considered high priority and should be investigated as required in this permit. If further investigation and corrective action results show the incident was isolated, with no indication of habitual illicit discharge, the outfall may be removed from the high priority list during annual review. ii. Implement the Illicit Discharge Investigation and Corrective Action Plan. When an illicit discharge is identified, the permittee must cease, or require the cessation of, the discharge within a timeframe of six months. After the illicit discharge has been eliminated, the permittee must also minimize surface contamination by removing, or requiring the removal of, surface residue or other types of pollutant sources. iii. Maintain documentation which describes investigations conducted and corrective actions taken per the Illicit Discharge Investigation and Corrective Action Plan. Submit a summary with each annual report.	Annually	Measurable Goal: <u>Maintain current illicit discharge investigation and corrective action plan.</u> Responsible Party: BSB Storm Water Coordinator, BSB Metro Division Action Items & Deliverables/Deadline: - Maintain illicit discharge investigation and corrective action plan. <i>BSB will use the Illicit Discharge Investigation and Corrective Action Plan template and/or revise the existing BSB Illicit Discharge Detection & Elimination (IDDE)/Repair & Illegal Dumping Plan.</i> - Identify outfalls with known illicit discharges as high priority. <i>BSB will develop/maintain a list of outfalls with known illicit discharges.</i> - The illicit discharge investigation and corrective action plan will refer to the ERP. <i>BSB will incorporate ERP enforcement actions into the illicit discharge investigation and corrective action plan.</i> - Submit the illicit discharge investigation and corrective action plan. <i>BSB will submit the illicit discharge investigation and corrective action plan.</i> Resources: - BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?modelid=1054005 - BSB Illicit Discharge Reports (2011, 2012, 2013) Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
d. Through ordinance or other regulatory mechanism to the extent allowable under state or local law, effectively prohibit discharge of non-storm water into the regulated storm sewer system and implement appropriate enforcement procedures and actions.	i. Maintain, update, and implement a formal Enforcement Response Plan (ERP) for illicit discharges. At a minimum, the ERP must describe or identify the following: - Legal authority (through ordinance, formal policies, or memoranda of understanding) to eliminate and abate illicit discharges - Staff with enforcement authority - Enforcement actions available - An enforcement escalation process - A schedule utilized to quickly and consistently eliminate the source of the discharge, abate any damages, and reduce the chance of reoccurrence. To the extent allowable under local and state law, the ERP must include informal, formal, and judicial responses, such as the following: Informal: - Telephone Notification - Verbal/Written Notice - Meetings Formal: - Administrative Order	Annually	Measurable Goal: <u>Prohibit illicit discharges through an ordinance.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: - Existing Ordinance No. 2020-06 addresses the prohibition of illicit discharges. <i>BSB has completed this May 2018 and updated December 2020 – And is still relevant Q1-2022.</i> Resources: - BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?modelid=1054005 - BSB ERP - https://bsbstormwater.org/management/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

	• Compliance Schedule • Order to Show Cause • Monetary Penalty (administrative) • Suspended Service • Notice of Violation (NOV) Judicial: • Injunctive Relief • Consent Decree • Civil Penalties • Criminal Penalties ii. Permittees with legal authority must adopt an ordinance or other regulatory mechanism to prohibit illicit discharges, which shall include a provision prohibiting any occasional incidental non-storm water discharge event. Review the ordinance or regulatory mechanism once per permit cycle and update as needed. Permittees without legal authority to enact an ordinance or other regulatory mechanism to prohibit illicit discharges must develop and implement written policies and procedures to exert authority (to the extent allowable) over MS4 users, such as employees, the traveling public, contractors, etc. Review these written policies and procedures once per permit cycle and update as needed.		
	iii. Solicit assistance from neighboring MS4s, as necessary, to detect and eliminate illicit discharges that may originate within the neighboring MS4 and formalize in cooperative agreements (i.e. memoranda of understanding). Agreements shall specify investigation and enforcement responsibilities and shall be described in each permittee's ERP and Illicit Discharge Investigation and Corrective Action Plan. Formalize cooperative agreements with all neighboring MS4s, as necessary, to implement the IDDE program.	Annually	Measurable Goal: Demonstrate cooperation with neighboring MS4s, the Montana Department of Transportation (MDT). Responsible Party: BSB Storm Water Coordinator, Butte MDT Action Items & Deliverables/Deadline: 1. Meet with MDT. BSB meets monthly with MDT. 2. Develop agreements with MDT. BSB meets monthly with MDT. 3. Formalize agreements with MDT. BSB meets monthly with MDT. 4. Summarize MDT cooperative agreements. BSB will continue to report the results of the MDT cooperative agreements. /Q4-2022 Resources: • BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?nodeid=1054005 • MDT website https://www.mdt.mt.gov/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
e. Inspect all outfalls during dry weather to detect illicit discharges and connections into the MS4.	i. Inspect and screen all the permittee's outfalls during dry weather using the outfall field screening protocol developed by the Center for Watershed Protection, or an equivalent process. Using the protocol, if illicit discharge potential is determined, the permittee shall use the procedures identified above for tracing and removing an illicit discharge. This process shall be completed by the end of the permit cycle.	Annually	Measurable Goal: <u>Conduct dry weather outfall inspections.</u> Responsible Party: BSB Storm Water Coordinator, BSB Metro Division Action Items & Deliverables/Deadline: 1. Determine the Standard Operating Procedure (SOP) for outfall field screening.

			<i>BSB will follow outfall field screening SOP.</i> 2. Choose an outfall field screening form. <i>BSB will use the Outfall Reconnaissance Inventory/Sample Collection Field Sheet template.</i> 3. Inspect outfalls. <i>Inspect and document 20% of the existing inventoried outfalls per calendar year. 2022, 2023, 2024, 2025, 2026</i> Resources: - Center for Watershed Protection website Home - Center for Watershed Protection (cwp.org) - BSB Outfall Audit Ready Binder Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii. Inspect and screen identified high priority outfalls (from II.A.2.b.ii, above) during dry weather a minimum of once per year and submit a summary of screening results with each annual report.	Annually	Measurable Goal: <i>Inspect high priority outfalls and document results.</i> Responsible Party: BSB Storm Water Coordinator, BSB Metro Division Action Items & Deliverables/Deadline: - Inspect high priority outfalls. <i>BSB will inspect high priority outfalls annually. 2022, 2023, 2024, 2025, 2026</i> - Summarize high priority outfall screening results with each annual report. <i>BSB will summarize high priority outfalls screening results. 2022, 2023, 2024, 2025, 2026</i> Resources: - Center for Watershed Protection website Home - Center for Watershed Protection (cwp.org) - BSB Outfall Audit Ready Binder Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

4.	CONSTRUCTION SITE STORM WATER MANAGEMENT			
	• Develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction activities that result in a land disturbance of greater than or equal to one acre, including activities that are part of a larger common plan of development or sale that would disturb one acre or more. • Develop and implement, at a minimum, the following: - o An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under state and local law; - o Requirements for site operators to implement appropriate erosion and sediment control BMPs, and to control waste; - o Procedures for site plan reviews that incorporate consideration of potential water quality impacts; - o Procedures for receipt and consideration of information submitted by the public; and - o Procedures for site inspection and enforcement control measures.			
	Minimum Measure	Required BMP	Permit Year	Measurable Goal, Responsible Party, Action Items & Deliverables, Resources, and Due Date
a. Require that all regulated construction projects within the Small MS4 submit a construction storm water management plan (site plan) prior to construction. The plan shall be consistent with state and local requirements and incorporate consideration of potential water quality impacts including storm water pollution prevention through appropriate erosion, sediment, and waste control BMPs. A storm water pollution prevention plan (SWPPP) developed pursuant to the MPDES General Permit, MTR100000 for Storm Water Discharges Associated with Construction Activity (MPDES Storm Water Construction GP), may substitute for this site plan.	i.	Traditional MS4s: Update and implement a construction storm water management plan review checklist that documents, at a minimum, the requirements described in the Technology-Based Effluent Limitations of the most current MPDES Storm Water Construction GP for all regulated construction projects. The checklist shall be used to ensure consistent review of submitted plans and to determine and document compliance with state and local requirements.	Annually	Measurable Goal: <u>Update construction storm water management plan review checklist.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Ordinance No. 2020-06 addresses the requirement for construction storm water management plan review checklist. <i>BSB is currently using a checklist (BSB Municipal Storm Water Engineering Standards Checklist Dec. 2020).</i> 2. Review existing BSB Municipal Storm Water Engineering Standards Checklist and Construction Stormwater Management Plan Review Checklist template. <i>BSB will review checklists and revise as needed.</i> Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
b. Ensure that all construction storm water management controls are installed, operated, and maintained to function as designed.	i.	Traditional MS4s: Update and implement a site inspection form or checklist to complete consistent and thorough regulated project inspections for all regulated construction projects. The checklist shall include, at a minimum, the requirements described in the Technology-Based Effluent Limitations of the most current MPDES Storm Water Construction GP.	Annually	Measurable Goal: <u>Update and implement site inspection checklist.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Use Construction Site Visit Inspection Form template, which includes Non-Numeric Technology-Based Effluent Limits: – Erosion and Sediment Controls, – Soil Stabilization, – Dewatering, – Pollution Prevention Measures, – Prohibited Discharges, and – Surface Outlets. <i>BSB is current using forms located in the Dec. 2020 Engineering Standards and will revise as needed.</i> Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii.	Maintain a regulated project inventory to include, at minimum, the following: • If the project is covered under the most current MPDES Storm Water Construction GP and if so, the associated authorization number • The location, size, and topography of the site • The proximity of the site to waterbodies for each project	Annually	Measurable Goal: <u>Maintain a regulated project inventory.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline:

	iii. Utilize a protocol to determine the priority and minimum routine inspection frequency of construction storm water management controls. Priority is to be determined using, at a minimum, the following criteria: • Project size • Proximity to a water body • Steepness of the project site slopes • Discharge to waterbodies impaired for pollutants expected from construction projects • Past record of non-compliance by the operator of the construction site The protocol shall establish the following minimum routine inspection frequency for all determined high priority projects: • Once at commencement of construction after BMPs have been implemented • Once within 48 hours after each rain event of 0.25 inches or greater • Once within 48 hours after each occurrence of runoff from snowmelt due to thawing conditions that cause visible surface erosion at the site • Once at the conclusion of the project prior to finalization (i.e. release of bond, issuance of certificate of occupancy, etc.) In addition, the protocol shall include recidivism reduction and corrective measures at non-compliant sites, such as processes for: • Additional on-site visits; • Increased inspection frequency; • Written notice of violations; • Stop work orders; and • Advancement to enforcement via the ERP process, as discussed below in II.A.3.c.iii. iv. The permittee must annually identify and inspect a minimum number of projects not equaling zero. Conduct and document inspections using the inspection form and determined routine inspection frequency protocol. If a routine inspection identifies non-compliance, or a failure to implement appropriate control measures that cannot be corrected at the time of initial inspection, the permittee must verify and confirm issues have been corrected within 14 days of documentation of non-compliance. If the illicit discharge has not ceased after 14 days, or control measures are still inadequate, the permittee must advance the non-compliant site through the established ERP process (II.A.3.c.iii).	1. Develop and maintain a regulated project inventory. <i>BSB will use the MS4 Construction Application Log</i> 2. Develop an inspection frequency determination protocol. <i>BSB will use Construction Site Stormwater Inspection Frequency Determination Protocol from.</i> 3. Existing checklist addresses specific criteria (i.e., project size, etc.). <i>BSB will use the MS4 Construction Application Log</i> 4. Revise existing "MS4 BSB Written Procedures for Construction Storm Water Plans" to address all requirements: - Once at commencement of construction after BMPs have been implemented; - Once within 48-hours after a rain event of 0.25 inches or greater; - At the conclusion of the project prior to finalization; - Recidivism reduction measures such as incentives; - Disincentives; or - Increased inspection frequency at non-compliant operator's sites. <i>BSB will review and update MS4 BSB Written Procedures for Construction Storm Water Plans as needed.</i> 5. Identify and inspect a minimum number of construction projects not equal to zero annually. - Conduct and document inspections using the MS4 Construction Application Log and construction project inspection form; - Determine if routine inspection identifies non-compliance, or a failure to implement appropriate control measures that cannot be corrected at the time of initial inspection; - Allow 14 days for permittee to verify and confirm issues have been corrected within 14 days of documentation of non-compliance; - If the illicit discharge has not ceased or control measures are still inadequate, the permittee must advance the non-compliant site through the established ERP process. <i>BSB will provide inspection records in the annual report.</i> Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
c. Through ordinance or other regulatory mechanism to the extent allowable under state and local law, effectively require controls of construction-related pollutants (such as sediment and erosion) on regulated construction projects and implement appropriate enforcement procedures/actions.	i. Traditional MS4s: Adopt and implement an ordinance or other mechanism to require construction storm water controls on private and permittee-owned regulated projects. At a minimum, the regulatory mechanism must: • Require the construction storm water management minimum standards (described as Technology-Based Effluent Limitations in the most current MPDES Storm Water Construction GP) to be implemented on all regulated construction projects.	Measurable Goal: <u>Require, through Ordinance, erosion and sediment controls for post-construction projects.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Existing Ordinance No. 2020-06 addresses the requirement for post-construction storm water controls on private and permittee-owned regulated projects.

	• Provide the permittee the authority to inspect privately-owned construction storm water management controls.		<i>BSB will review and update Ordinance to include performance standards as needed.</i> 2. Continue to require Operation and Maintenance Agreement for post-construction storm water controls. Resources: • BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?nodeId=1054005 • BSB Municipal Storm Water Engineering Standards - https://bsbstormwater.org/permit/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii. The Enforcement Response Plan (ERP) developed in II.A.2.d.i. shall be implemented and maintained to ensure compliance with construction storm water management regulatory mechanisms on regulated projects including private property. The ERP must include informal, formal, and judicial responses (as listed in II.A.2.d.i.). Additionally, the ERP shall include sanctions and enforcement mechanisms to achieve compliance and must describe or identify, at a minimum, the following: • How the permittee will eliminate and abate illegal construction discharges • Staff with enforcement authority • Enforcement actions available • Enforcement escalation processes including a schedule to quickly and consistently eliminate the source of the discharge • How the permittee will facilitate abatement of the damages and reduce the chance of reoccurrence In addition, the ERP must also include non-monetary construction project-specific penalties such as stop work orders, bonding requirements, and/or permit denials for non-compliance. Review the written ERP once per permit cycle and document updates in the SWMP, as needed.	Annually	Measurable Goal: <u>Maintain Emergency Response Plan (ERP).</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Maintain an ERP for post-construction storm water management controls on regulated projects and private property. <i>BSB will meet all ERP requirements.</i> 2. ERP must include informal, formal, and judicial responses. <i>BSB will meet all ERP requirements.</i> 3. ERP must address legal authority, staff with enforcement authority, enforcement actions, enforcement escalation, and responsiveness. <i>BSB will meet all ERP requirements.</i> Resources: • BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?nodeId=1054005 • BSB ERP - https://bsbstormwater.org/management/ Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026

5.	POST-CONSTRUCTION SITE STORM WATER MANAGEMENT		
	• Develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. Ensure that controls are in place to prevent or minimize water quality impacts. • Develop and implement strategies that include a combination of structural and non-structural BMPs appropriate for the community. • Develop and implement an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law. • Ensure adequate long-term operation and maintenance of post-construction BMPs.		
	Minimum Measure	Required BMP	Permit Year
a.	Require that all regulated development projects submit a site plan consistent with state and local post-construction requirements, which incorporates consideration of potential water quality impacts including appropriate post-construction storm water management controls.	i. Traditional MS4s: Update and implement a plan review checklist to ensure consistent review of submitted plans and to determine and document compliance with state and local post-construction requirements.	Annually
		ii. Require that all regulated projects implement post-construction storm water management controls that are designed to infiltrate, evapotranspire, and/or capture for reuse the post-construction runoff generated from the first 0.5 inches of rainfall from a 24-hour storm preceded by 48 hours of no measurable precipitation (runoff reduction requirement). For projects that cannot meet 100% of the runoff reduction requirement, the remainder of the runoff from the first 0.5 inches of rainfall must be either: • Treated onsite using post-construction storm water management controls expected to remove 80 percent total suspended solids (TSS); • Managed offsite within the same sub-watershed using post-construction storm water management controls that are designed to infiltrate, evapotranspire, and/or capture for reuse; or • Treated offsite within the same sub-watershed using post-construction storm water management controls expected to remove 80 percent total suspended solids (TSS) Permittees allowing offsite treatment shall do the following: • Develop and apply criteria for determining the circumstances under which offsite treatment may be allowed. The criteria must be based on multiple factors, including but not limited to technical or logistic infeasibility, such as: • Lack of available space • High groundwater • Groundwater contamination • Poorly infiltrating soils • Shallow bedrock	Annually
Measurable Goal, Responsible Party, Action Items & Deliverables, Resources, and Due Date			
Measurable Goal: <u>Update and implement a plan review checklist to comply with state and local post-construction requirements.</u>			
Responsible Party: BSB Storm Water Coordinator			
Action Items & Deliverables/Deadline: 1. Review existing BSB Municipal Storm Water Engineering Standards & Checklist to ensure compliance. BSB will review and revise existing plan review checklist.			
Resources: • BSB Municipal Storm Water Engineering Standards http://www.co.silverbow.mt.us/DocumentCenter/Home/View/88 • BSB Municipal Storm Water Engineering Standards Checklist http://www.co.silverbow.mt.us/DocumentCenter/Home/View/86			
Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026			
Measurable Goal: <u>Maintain BSB Municipal Stormwater Engineering Standards.</u>			
Responsible Party: BSB Storm Water Coordinator			
Action Items & Deliverables/Deadline: 1. BSB Municipal Stormwater Engineering Standards updated in 2020 and reflect current permit requirements.			
Resources: • BSB Municipal Storm Water Engineering Standards http://www.co.silverbow.mt.us/DocumentCenter/View/88 • BSB Municipal Storm Water Engineering Standards Checklist http://www.co.silverbow.mt.us/DocumentCenter/Home/View/86			
Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026			

	• Prohibitive costs • A land use that is inconsistent with capture and reuse or infiltration of storm water Determinations may not be based solely on the difficulty and/or cost of implementation. The permittee must develop a formal review and approval process for determining projects eligible for offsite treatment. The offsite treatment option is to be used only after available onsite options have been evaluated and documented through the permittee's developed formal review and approval process. • Maintain an inventory of regulated projects which utilize offsite treatment for post-construction storm water runoff. The inventory must include the following information for each approved project: • Geographic location of the project • Location of offsite treatment • Documentation of the rationale for approval of offsite treatment		
b. Ensure that all post-construction storm water management controls are installed, operated, and maintained to function as designed.	i. Traditional MS4s: Update and implement an inspection form or checklist to ensure consistent and thorough inspections of post-construction storm water management controls.	Annually	Measurable Goal: <u>Maintain an inspection checklist for post-construction storm water management controls.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Develop an inspection checklist for post-construction storm water management controls. <i>BSB will continue to use existing BSB Storm Water Management/BMP Maintenance Agreement and Post-Construction Stormwater Management Control Inspection Form and use an inspection checklist.</i> <i>BSB will continue to use existing Inspection Checklists and protocol for Superfund Storm Water Structures within the Butte Priority Soils Operable Unit (BPSOU) as required under remedy. /2022-2026</i> Resources: • BSB Municipal Storm Water Engineering Standards http://www.co.silverbow.mt.us/DocumentCenter/View/88 • Interim Operation and Maintenance Plan for the BSB Superfund Storm Water System within the BPSOU. Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii. Maintain an inventory (including at a minimum, a description and location) of all new permittee-owned and private post-construction storm water management controls installed since the effective date of this permit.	Annually	Measurable Goal: <u>Develop and maintain an inventory of new permittee-owned and private post-construction storm water management controls.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Develop an inventory of new non-Superfund permittee-owned and private post-construction storm water management controls. <i>BSB will document and update inventory new controls.</i> <i>BSB will continue to update and maintain inventory of new Superfund Storm Water Structures installed within the Butte Priority Soils Operable Unit (BPSOU) as required under remedy.</i> Resources:

			• Interim Operation and Maintenance Plan for the BSB Superfund Storm Water System within the BPSOU. Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
iii.	Traditional MS4s: Maintain an inventory (including at minimum, a description and location) of all existing permittee-owned and private high priority post-construction storm water management controls installed prior to the effective date of this permit.	Annually	Measurable Goal: <u>Develop and maintain an inventory of existing permittee-owned and private post-construction storm water management controls.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Develop an inventory of existing Non-Superfund permittee-owned and private high priority post construction storm water management controls. <i>BSB will document and update inventory of existing Non-Superfund controls. BSB will continue to maintain and update existing inventory of Superfund Storm Water Structures installed within the Butte Priority Soils Operable Unit (BPSOU) as required under remedy. /2022-2026</i> Resources: • BSB website Home - Stormwater Management (bsbstormwater.org) • Interim Operation and Maintenance Plan for the BSB Superfund Storm Water System within the BPSOU. Due Date: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
iv.	Utilize a protocol to determine the priority and minimum routine inspection frequency of post-construction storm water management controls. Priority must be determined based on potential water quality impacts using specific criteria, which at a minimum shall include: • Operation and maintenance needs of the practices • Proximity to water body • Drainage area treated • Land use type • Location within an impaired waterbody watershed The permittee must annually identify a minimum number of projects for inspection not equaling zero.	Annually	Measurable Goal: <u>Develop an inspection frequency determination protocol.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Develop an inspection frequency determination protocol. <i>BSB will review the Post-Construction Storm Water Management Control Inspection Frequency Determination Protocol and develop a protocol. BSB will continue to use inspection frequencies identified for Superfund Storm Water Structures within the Butte Priority Soils Operable Unit (BPSOU) as required under remedy.</i> Resources: • Interim Operation and Maintenance Plan for the BSB Superfund Storm Water System within the BPSOU. Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
v.	Inspect all permittee-owned high priority post-construction storm water management controls annually and document findings and resulting compliance actions.	Annually	Measurable Goal: <u>Inspect and document permittee-owned post-construction controls.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Inspect BSB-owned high priority post-construction storm water management controls (i.e., ponds, ditches, etc.) annually.

			<i>BSB will inspect and document results.</i> <i>BSB will continue to inspect Superfund Storm Water Structures within the Butte Priority Soils Operable Unit (BPSOU) as required under remedy.</i> Resources: Interim Operation and Maintenance Plan for the BSB Superfund Storm Water System within the BPSOU. Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	vi. Traditional MS4s: Develop a program to either conduct inspections of private high priority post-construction storm water management controls, or to require self-inspection and reporting by owners. Inspect or have inspected all high priority privately-owned post-construction storm water management controls annually. Document findings and resulting compliance actions.	Annually	Measurable Goal: <u>Inspect privately-owned controls and document.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Inspect privately-owned high priority post-construction storm water management controls (i.e., ponds, ditches, etc.) annually. <i>BSB will inspect and document results.</i> Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
c. To the extent allowable under state or local law, effectively require, through ordinance, or other regulatory mechanism, post-construction storm water management controls on regulated projects and implement appropriate enforcement procedures and actions.	Traditional MS4s: Adopt and implement an ordinance or other regulatory mechanism to require post-construction storm water management controls on regulated projects that, at a minimum, include the performance standard described in Part II.A.4.a.ii, above. Review the ordinance or regulatory mechanism once per permit cycle and update as needed.	Annually Annually	Measurable Goal: <u>Require, through Ordinance, erosion and sediment controls for post-construction projects.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Ordinance No. 10-13 was amended in 2020 and addresses the requirement for post-construction storm water controls on private and permittee-owned regulated projects and required performance standards. <i>BSB updated Ordinance to include performance standards</i> 2. Continue to require Operation and Maintenance Agreement for post-construction storm water controls. Resources: BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver-bow-county/ordinances/code-of-ordinances?nodeId=1054005 Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	iv. The ERP developed in II.A.2.d.i. shall be implemented and maintained to ensure compliance with installation, operation, and maintenance requirements for post-construction storm water management controls on regulated projects including private property. The ERP must include informal, formal, and judicial responses (as listed in II.A.2.d.i.). Additionally, at a minimum, the ERP must describe or identify the following: Legal authority to require inspection and maintenance of post-construction storm water management controls		Measurable Goal: <u>Implement and maintain Emergency Response Plan (ERP).</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Implement ERP. <i>BSB will implement ERP and document violations.</i>

	• Staff with enforcement authority • Enforcement actions available • An enforcement escalation processes • A schedule to be utilized to quickly and consistently enforce compliance with post-construction requirements.		Resources: • BSB Ordinance No. 2020-06 https://librarystage.municode.com/mt/butte-silver_bow_county/ordinances/code_of_ordinances?nodeId=1054005 Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
d. Incorporate recommendations and requirements into plans, policies, and ordinances which allow and support the utilization of LID (low impact development) concepts and green infrastructure on public and private property.	i. Assess and document existing ordinances, policies, programs, and studies to identify whether the following LID concepts (both structural and non-structural BMPs) have been implemented to promote protection of storm water runoff quality associated with new and redevelopment projects: • Directing growth to identified areas • Protecting sensitive areas such as wetlands and riparian areas • Maintaining and/or increasing open space • Providing buffers along sensitive water bodies • Minimizing impervious surfaces • Minimizing disturbance of soils and vegetation ii. By the end of the third year of the permit cycle, develop and submit a plan outlining any needed modifications to relevant codes, ordinances, policies, and programs to implement LID/green infrastructure concepts. The plan shall include, but is not limited to, the preventative actions identified above that have not yet been implemented and proposed timelines for any needed code, ordinance, policy or programmatic updates. If modifications to codes, ordinances, policies, or programs are not needed, submit a plan/overview of any work scheduled or completed to implement LID/green infrastructure concepts, such as those listed above.	2024	Measurable Goal: Incorporate utilization of LID concepts on public and private property into plans, policies and ordinances. Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: 1. Storm Water Management Team will discuss options for implementing and encouraging the use of LID infrastructure in the permittee's codes, ordinances and policies. <i>BSB will document barriers and adjustments needed for codes, ordinances and policies in order to submit a plan to modify relevant codes, ordinances, policies and programs to implement LID/green infrastructure concepts./Q3,Q4- 2024.</i> 2. Develop and submit LID plan. Resources: • EPA website https://www.epa.gov/green-infrastructure/green-infrastructure-design-and-implementation • EPA website https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/incorporatingLID.pdf • State of Washington Department of Ecology http://www.ecy.wa.gov/programs/wq/stormwater/municipal/LID/Resources.html Due Date: December 31, 2024

6.	POLLUTION PREVENTION AND GOOD HOUSEKEEPING Develop and implement an operation and maintenance program that includes a training component and has the goal of preventing or reducing pollutant runoff from municipal operations. The program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.		
Minimum Measure	Required BMP	Permit Year	Measurable Goal, Responsible Party, Action Items & Deliverables, Resources, and Due Date
a. Implement an operation and maintenance program to prevent or reduce pollutant runoff from permittee-owned/operated facilities and field activities.	i. Maintain a written inventory of permittee-owned/ operated facilities and activities that have the potential to contribute contaminants to the MS4. The inventory should include, at a minimum, the following: Facilities: • Maintenance and storage yards • Waste handling and disposal areas • Vehicle fleet or maintenance shops with outdoor storage areas • Salt/sand storage locations • Snow or dredge material disposal areas operated by the permittee Activities: • Park and open space maintenance • Parking lot maintenance • Building maintenance • Road maintenance/deicing • Storm water system maintenance including catch basin cleaning Organize facilities/activities into labeled categories and list the possible contaminants from each. List the local department(s) and position(s) responsible for pollution prevention of each facility/activity. Update the inventory annually.	Annually	Measurable Goal: <u>Update existing BSB owned and operated facility SWPPPs to identify activities that could potentially release contaminants to the MS4.</u> Responsible Party: BSB Storm Water Coordinator with assistance from other BSB Department Heads Action Items & Deliverables/Deadline: 1. Update inventory of BSB-owned/operated facilities and ensure that SWPPPs are prepared for each facility. <i>BSB will update CMW6 Worksheet 1a.</i> 2. Update existing SWPPPs to ensure that inventory of BSB activities and pollutants are included. Review and updated SWPPPs annually. <i>BSB will update CMW6 Worksheet 1b.</i> 3. Develop summary list of BSB personnel and contact information responsible for each facility and update annually. <i>BSB will compile a list of BSB personnel and contact information and update annually.</i> Resources: • BSB Facility Organization Chart, SWPPPs , and SWMP Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	ii. For each category established, maintain written standard operating procedures (SOPs) aimed at preventing or reducing pollutant contributions from municipal operations. Each SOP must contain, at a minimum, the following: • Identified storm water pollution controls (structural and non-structural controls, and operation improvements) installed, implemented, and/or maintained to minimize the discharge of contaminants. • Inspection procedures for facilities and their structural storm water controls, which at a minimum must include: - o An annual visual inspection of each applicable facility. - o A verification that the written facility procedures, documentation, and site map are current. - o Visual observation of locations and areas where storm water from facilities is discharged off-site, to state waters, or to a storm sewer system that drains to state waters. - o Visual observation of facility conditions, including pollutant sources and control measures, to identify control measures that are inadequate or needing maintenance. All inadequate control measures shall be modified or replaced as soon as possible, but no later than six months from visual inspection. If a control measure cannot be modified or replaced within the six-month timeframe due to infeasibility (such as financial burden or time commitment of capital improvement projects), the permittee will provide a written explanation and a schedule for improvement with the following	Annually	Measurable Goal: <u>Maintain SOPs for BSB owned and operated facilities and activities.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: • Prepare SOPs for BSB-owned/operated facilities and activities. <i>BSB will maintain existing SoPs (Civic Center, Kelly Shop, BSB Parks, Open Spaces, and Turf Management, old Maintenance Center).</i> <i>BSB will maintain SOPs for Road activities.</i> <i>BSB will maintain SOPs for Storm water system maintenance.</i> <i>BSB will maintain SOPs for new Maintenance Center, Crusher.</i> • Annually inspect and document 2 BSB-owned/operated facilities and activities per year. <i>BSB will inspect and document Civic Center and Kelly Shop./</i> <i>BSB will inspect and document BSB Parks, Open Spaces, and Turf Management./</i> <i>BSB will inspect and document Road activities (maintenance, deicing, snow removal, salt/sand storage, parking lot maintenance)and storm water system maintenance (HDDs and catch basin cleaning)./</i> <i>BSB will inspect and document Maintenance Center and Crusher./</i> Resources: • EPA website https://www.epa.gov/quality/guidance-preparing-standard-operating-procedures • BSB Facility SWPPPs and SWMP • BSB Superfund Storm Water Structure (SSWS) O&M Plan

	year's annual report. Document facility inspections and communication with relevant department personnel regarding inadequate control measures. Evaluate/update each SOP at least once over the term of this permit and submit any updates to SOPs with the annual report.		Training for Superfund Crews Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	iii. Maintain a map that identifies the locations of facilities and activities identified. Update the map annually.	Annually	Measurable Goal: <u>Maintain a map showing BSB owned and operated facilities.</u> Responsible Party: BSB Storm Water Coordinator, BSB GIS Department Action Items & Deliverables/Deadline: - Maintain map of locations of BSB-owned/operated facilities and activities. Update annually. BSB will prepare and share map with BSB employees, department heads and public (via website). Update annually. Resources: - BSB Facility SWPPPs and SWMP Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
	iv. Conduct storm water pollution prevention training in compliance with section II.B. (below) for all permittee staff directly involved with implementing SOPs. Retain records of completed trainings and attendance.	Annually	Measurable Goal: <u>Develop storm water pollution prevention training associated with each SOP.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: - Plan and implement annual storm water pollution prevention training. BSB will itemize pertinent storm water pollution prevention training goals during SOP maintenance. BSB will develop facility and pollutant specific training materials/ Resources: - EPA website https://www.epa.gov/quality/guidance-preparing-standard-operating-procedures - SOPs (facility) SWPPPs - BSB Training Materials (2012-present) Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026 Measurable Goal: <u>Conduct storm water training for BSB personnel.</u> Responsible Party: BSB Storm Water Coordinator Action Items & Deliverables/Deadline: - Plan and document storm water pollution prevention training. BSB will conduct training as follows: Civic Center, Kelly Shop, BSB Parks, Open Spaces, and Turf Management./ BSB Road activities personnel and storm water system maintenance personnel./ BSB Maintenance Center, Crusher personnel./ Resources: - SOPs (facility) SWPPPs. - BSB Training Materials (2012-present)

			Due Dates: December 31, 2022; December 31, 2023; December 31, 2024; December 31, 2025; December 31, 2026
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Appendix L
Sampling Rationale Summary



THE CITY-COUNTY OF Butte-Silver Bow

February 22, 2023

Appendix L Sampling Rationale – MS4 Annual Report

Two sampling events were not conducted during the 2022 year due to time of storm events, staffing and dates on which storm events occurred. BSB plans to perform two sampling events in the first half of 2023. BSB in conjunction with BPSOU remedy monitoring does report on the TMDL monitoring that is performed on the Metro Storm Drain, Silver Bow Creek sampling for four locations. The data is formalized but not validated or approved by Montana Department of Environmental Quality (MDEQ) until the end of the first quarter of a year. Therefor TMDL reporting included in this report is one year behind the current annual report year. BSB updates the sampling datasite, loading charts, and continues to implement updates to SOPs, SWMP and Ordinances based on the results of the monitoring performed within the MS4.

Appendix M
Superfund Reports



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
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February 10, 2022

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RE: January 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for January 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – January 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during January 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In January, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 2330 – Large boulders placed on perimeter of walking trail to prevent vehicular access onto the trail. Removal of snow from inlet outlet structure and taken to the snow storage site.
- BRES Site 58 – Removal of snow from front of gates to ensure safe access to the trail system. The snow was taken to the snow storage site.
- BRES Site 30 – Removal of trash from ditch and disposed of at the landfill.
- BRES Site 72S – Removal of several loads of dirt that were dumped onto the site from nearby construction and disposed of at the MWR.
- BRES Site 174 – Removal of trash from ditch and disposed of at the landfill.
- BRES Site 60 – Removal of snow from drain and inlet of ditch as snow was directing water out of the mine yard. Snow was taken to the snow storage site.
- BRES Site 48 – Removal of snow from inlet outlet structure and taken to the snow storage site.
- BRES Site 5 – Removal of snow from site to direct proper stormwater flow.
- Staging and stockpiling of boulders for future projects.
- Removal of snow from walkways, MWR, and the Granite Mountain Memorial and taken to the snow storage site.

BRES Program. BSB Staff is in the process of QA/QC on the data and shape files from the 2021 BRES evaluations. A technical summary and recommendations report will be submitted once completed.

Vegetation and Weed Controls. In January 2022, no weed control activities were performed.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 9 Excavation and Dirt-Moving Permits during the month of January; 2 within the BPSOU:

- 57 W. Platinum – demolition of garage and addition
- 701 Centennial Ave – new garage

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During January 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.
- Snow removed from various inlet outlet structures.

Superfund Storm Water Structures Inspections: BSB Staff received comments back from the Agency in February 2021 on the 2020 Stormwater System Inspection Report and continue to draft a response.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in January 2022:

- Received and reviewed Parrot Tailings Waste Removal Project-Draft Performance Monitoring Program 2020 Data Summary Report (DSR).
- Received and reviewed 2022 Final BPSOU Interim Site-Wide Groundwater Monitoring Quality Assurance Project Plan.
- Received and reviewed BNSF Railway Company and Union Pacific Railroad's December 2021 monthly activity report for the Butte Priority Soils Operable Unit.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding December 2021 Monthly Report.

D. GIS Activities

Primary work in the reporting period included:

- Exported and emailed map for Grove Gulch water line access project.
- Finalized and edited requests from Woodard Curran for the RMAP Database Survey 123.
- Granted RMAP and Woodard Curran permissions for reporting to account.

- Exported parcel layer from Enterprise as a ship to sync with AGOL parcel feature.
- Synced AGOL parcel feature with parcel shapefile for State Library webmap link.
- Troubleshooted RMAP sample point location access error with Woodard Curran.
- Sent RMAP maps and features to Woodard and Currant account for editing.
- Imported sample point backup for RMAP.
- Imported Ozone, North Star Np.1, Blue Vein No. 2, Valentine, Columbia, Mars, M21, Blennerhassett, Sarsfield, and Myrahl kmz from Anthony Roth.
- Edited AR-BSB parcel webmap and created webapp, base layers, modules, and informatics for Planning.
- Quarterly meeting with Montana State Library regarding Cadastral information.
- Pioneer request for BPSOU rock outcropping shapefile.
- RMAP Meeting to review GIS links, line work, form work, and data entry processes.
- Research of BPSOU area outcropping feature.
- Inquiry regarding ownership, parcel data associated with Ferry Lane holdings.
- Inquiry and correspondence of RMAP templates for Survey 123 forms and sampling.
- Request for Original Mine yard parcel and 2-ft contours for student project.
- Sync of parcel information with AGOL.
- Create file geodatabase of parcel layers from Enterprise.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

March 10, 2022

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Jonathan Morgan
Chief Remediation Counsel
Remediation Division
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Helena, MT 59620-0901

RE: February 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for February 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – February 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during February 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In February, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 5 – Repair to fence that was damaged by vehicle.
- BRES Site 75 – Removal of snow from alley front of gates to ensure safe access to the trail system. The snow was taken to the snow storage site.
- BRES Site 60 – Doors at mine yard secured after vandalism.
- BRES Site 2330 – Removal of sediment along walking trail that accumulated from an adjacent rock outcropping. The sediment was disposed of at the MWR.
- Maintenance to gate of the MWR.
- Removal of snow from around fire hydrants. Snow taken to snow staging area.
- Removal of snow from access roads into various mine yards, walkways, trail system, MWR, and the Granite Mountain Memorial and taken to the snow storage site.

BRES Program. BSB Staff is in the process of QA/QC on the data and shape files from the 2021 BRES evaluations. A technical summary and recommendations report will be submitted once completed.

Vegetation and Weed Controls. In February 2022, no weed control activities were performed.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 14 Excavation and Dirt-Moving Permits during the month of February; 6 within the BPSOU:

- 1124 W. Porphyry St. – excavation for two egress windows
- 703 N. Montana – replace sewer service
- 814 S. Dakota St. – replace water service
- 1 N. Montana St. – resizing of water service
- 701 S. Arizona – replace water and sewer services

- 319 S. Montana St. – repair broken water service

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During February 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- CB8 - Removal of sediment from sediment trap and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.
- Snow removed from various storm drains and inlet outlet structures.

Superfund Storm Water Structures Inspections: BSB Staff received comments back from the Agency in February 2021 on the 2020 Stormwater System Inspection Report and continue to draft a response.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in February 2022:

- Coordinated with Montana Bureau of Mines and Geology regarding private well sampling as part of the Butte Controlled Groundwater Area monitoring.
 - All wells sampled had no exceedances for Butte Priority Soils Operable Unit Contaminants of Concern.
 - Letters are currently being drafted and will be sent to all participants of the domestic well sampling program.
- Received and reviewed BNSF Railway Company and Union Pacific Railroad's January 2022 monthly activity report for the Butte Priority Soils Operable Unit.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding– January 2022 Monthly Report.
- Attended February meeting for the Watershed Restoration Coalition of the Upper Clark Fork.

D. GIS Activities

Primary work in the reporting period included:

- Generated a map of BRES sites and their designation as either Insufficiently Reclaimed (IR) or Unreclaimed (UR).
- Exported primary source files for Reclamation to One Central File.
- Troubleshoot Enterprise login and user issues for Woodard Curran/RMAP Database.
- Research unique login for RMAP user to Enterprise SDE connection for Woodard Curran/RMAP Database.
- Created webmap and webapp of all BSB owned parcels for initial review at Land Sales Committee for Land Records.
- Emailed bsuser4 login information to Pioneer Technical/Jesse Sims for IR/UR planning.
- Meeting to discuss access to BSB Enterprise for parcel connection with Woodard Curran/RMAP Database.
- Research SDE login through Enterprise, server architecture for BSB Enterprise and shared with Woodard Curran/RMAP Database.
- Created Template and edit of database of requested historic mines/mills/smelters.
- Imported Travonia KMZ from Anthony Roth.
- Inquiry regarding 3D mine maps from MBMG for Joe Griffin.
- Exported, zipped, and emailed Reclamation and Metro stormwater features to Pioneer/Sims.
- Discussed Woodard Currant Enterprise Plans, SDE Login, and AGOL login users.
- Created user for rest service for URL in parcel SDE for Woodard Curran/RMAP Database.
- Attended meeting to discuss RMAP Database progress.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

April 8, 2022

Nikia Greene
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P.O. Box 200901
Helena, MT 59620-0901

RE: March 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for March 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

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Abby Peltomaa

Attachment: Monthly Report

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BSB Personnel
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Monthly Report – March 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during March 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In March, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 58 – Removal of sediment along street that flows into storm drain and disposed of at the MWR.
- BRES Site 178W – Removal of mine waste from site and disposed of at MWR.
- BRES Site 18 – Addition of EPA approved fill to sink hole on site.
- BRES Site 19 – Addition of EPA approved fill to sink hole on site.
- BRES Site 178 – Removal of contaminated dirt pile and mine waste from site and disposed of at MWR.
- BRES Site 56 – Repair to gate that was damaged on the site surrounding the mine shaft.
- Staging and stock piling of EPA approved cover soil for use in future projects.
- Removal of snow from staging area and various access roads into various mine yards and taken to snow storage site.

BRES Program. BSB Staff submitted the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and awaits agency comments.

Vegetation and Weed Controls. In March 2022, no weed control activities were performed.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 45 Excavation and Dirt-Moving Permits during the month of March; 21 within the BPSOU:

- 921 W. Broadway – replace water service
- 411 W. Broadway – replace water service
- 545 W. Mercury – replace sewer service
- 949 Antimony St. – replace sewer service
- 500 Block of Caledonia and W. Copper – replace gas main and services

- 500 Block of Edison and N. Franklin, 500-600 Blocks Caledonia – replace gas main and services
- 500 Block Edison, 600 Block Caledonia – replace gas main and services
- 800 Block Harrison and Florence Ave. – replace gas main and services
- 1007 Iowa Ave. – terminate water services for demolition
- 916 S. Colorado St. – demolition of house
- 920 W. Platinum – retire gas service
- 1327 Farrell St. – replace water service
- Platinum and S. Montana – NorthWestern Energy pole replacement
- Jackson and Mercury - NorthWestern Energy pole replacement
- Jackson and Galena - NorthWestern Energy pole replacement
- Excelsior and Diamond - NorthWestern Energy pole replacement
- 212 Opportunity Drive – new residential house foundation
- Aluminum and S. Montana - NorthWestern Energy pole replacement
- Platinum and S. Montana - NorthWestern Energy pole replacement
- Platinum and S. Montana - NorthWestern Energy pole replacement
- Porphyry and S. Montana - NorthWestern Energy pole replacement

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During March 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- CB8 – Removal of snow from screen at catch basin and taken to snow storage site. Removal of trash from catch basin and disposed of at landfill.
- CB9 – Removal of trash from landfill and disposed of at landfill.
- HD3 – Removal of sediment from HDD and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.
- Snow removed from various storm drains and inlet outlet structures and taken to snow storage sites.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff is currently drafting the 2021 Stormwater System Inspection Report. Comments received from the Agency in February 2021 on the 2020 Stormwater System Inspection Report will be addressed in the cover letter submitted with this report.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.

- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in March 2022:

- Coordinated with Montana Bureau of Mines and Geology regarding private well sampling as part of the Butte Controlled Groundwater Area monitoring.
 - All wells sampled had no exceedances for Butte Priority Soils Operable Unit Contaminants of Concern.
 - Letters were completed and sent to all participants of the domestic well sampling program.
- Received and currently reviewing the 2021 Data Summary Report for the Butte Alluvial Bedrock Controlled Groundwater Area.
- Received and reviewed BNSF Railway Company and Union Pacific Railroad's February 2022 monthly activity report for the Butte Priority Soils Operable Unit.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding-February 2022 Monthly Report.
- Attended March meeting for the Watershed Restoration Coalition of the Upper Clark Fork.
- Attended March Upper Clark Fork Streamflow Group Meeting.

D. GIS Activities

Primary work in the reporting period included:

- Woodard Curran access to superfund work status map for Emily Stoick.
- Created new BSB user login for Reclamation Department.
- Researched user creation and SDE editing for RMAP Database.
- Created basic map of expanded RMAP eligibility area for media distribution.
- Requested updated RMAP boundary from Pioneer and imported boundary for future use.
- Imported data of Walkerville abatements from RMAP Database.
- Generated a map product of Walkerville abatement locations.
- Imported Dora kmz stope map from Anthony Roth/MBMG.
- Request for active mining boundary and West Side Soils data for Alan Gilda, Blackjack.
- Created BRES quad 2 map book for 2021 reporting.
- Exported RMAP 3/2022 shape to AGOL and updated RMAP webmap with 2022 data.
- Packaged, exported, and emailed BRES quad 2 mapbook pages and set.
- Follow-up on O&M and maintenance data requests, data, and webmap links for Reclamation Department.
- Inquiry and email for snow management plan and removal updates, areas, and features.
- Edited template and database of requested historic mines, mills, and smelters for Reclamation Department.
- Simplified, exported, and sent National Priority List Operative Units to Mark Mariano, Rampart Solutions.
- Linked portal with AGOL features sets for use by public contractor Woodard Curran.
- Meeting to finalize the historic mine, mill, smelter map between Reclamation and GIS.
- Finalized historic mine, mill, and smelters webapp.
- Meeting for RMAP Database between BSB, AR, WC.
- Exported weekly activity from BRES O&M database to develop weekly reports.

- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
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May 10, 2022

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RE: April 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for April 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

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Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – April 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during April 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In April, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 60 – Addition of eight cubic yards of EPA approved cover soil to establish walking trail at Foreman's Park.
- BRES Site 121 – Addition of eight cubic yards of 6-inch minus to swale for erosion control. Removal of eight cubic yards of sediment from swale and disposed of at the MWR.
- BRES Site 47 – Addition of one cubic yard of 6-inch minus to inlet outlet structure for erosion control. Removal of nine cubic yards of concrete and debris at site and disposed of at the MWR.
- BRES Site 18 – New post installed with one cubic yard of concrete and repair to damaged fence, fence post, and gate.
- BRES Site 71 – Installed man gate for south slope access near fire hydrant. Utilized one cubic yard of concrete for posts.
- BRES Site 133 – Addition of twenty-four cubic yards of approved EPA fill to sinkhole.
- BRES Site 46 – Removal of sixteen cubic yards of sediment from ditch and disposed of at MWR.
- BRES Site 51 – Removal of fifteen cubic yards of sediment from ditch and disposed of at MWR.
- BRES Site 120 – Removal of thirty-five cubic yards of sediment from snow storage site and disposed of at the MWR.
- BRES 2310 – Removal of eleven cubic yards of trash from site and disposed of at the landfill.
- BRES Site 57 – Removal of one hundred and forty cubic yards of sediment along street and disposed of at the MWR.
- BRES Site 134 – Flushed sinkhole on site with 1,500 gallons of water.
- BRES Site 2370 – Thirty pounds of garbage removed from along trail and disposed of at the landfill.
- Staging and stock piling of EPA approved cover soil and fill for use in future projects.
- Removal of snow from site roads and sidewalks and taken to snow storage site.

BRES Program. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In April 2022, no weed control activities were performed.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine

Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 62 Excavation and Dirt-Moving Permits during the month of April; 24 within the BPSOU:

- 800 W. Granite – replace water service
- 2318 S. Dakota St. – foundation for new home
- W. Iron St. – NorthWestern Energy pole replacement
- 428 S. Idaho – landscaping
- Galena and S. Montana - NorthWestern Energy pole replacement
- Galena and Crystal - NorthWestern Energy pole replacement
- Galena and Clark St. - NorthWestern Energy pole replacement
- Silver and Excelsior - NorthWestern Energy pole replacement
- Silver and Clark - NorthWestern Energy pole replacement
- Diamond and Excelsior - NorthWestern Energy pole replacement
- 1110 S. Ophir St. – importing 1,000 yards of fill from Centennial Concrete
- 1033 W. Mercury – foundation for house addition
- 3600 S. Montana and 80 Beef Trail Road – replace 200-foot section of existing 12-inch gas line to address integrity issues
- 633 S. Washington – dirt removal for basement water line repair
- 1513 3rd St. – retire gas service
- Civic Center Road – install new water line
- 25 W. Granite St. – install fiber optic cable to building
- 418 N. Jackson – repair water shut off valve
- 327 N. Wyoming St. – retire gas service
- 633 S. Washington – replace sewer service
- 101 N. Main St. – repair sewer service
- 401 E. Front St. – replace sidewalk
- 423 N. Jackson – repair failing foundation
- 820 W. Platinum – replace sewer service

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During April 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- DD1 – Addition of four cubic yards of 6-inch minus to ditch for erosion control. Removal of eight cubic yards of sediment from ditch and disposed of at MWR.
- DD16 – Removal of six cubic yards of sediment from ditch and disposed of at the MWR.
- CB8 – Removal of twenty-nine cubic yards of trash from site and disposed of at the landfill.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

- Snow removed from various storm drains and inlet outlet structures and taken to snow storage sites.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff is currently drafting the 2021 Stormwater System Inspection Report. Comments received from the Agency in February 2021 on the 2020 Stormwater System Inspection Report will be addressed in the cover letter submitted with this report.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in April 2022:

- Received and reviewed the BPSOU Silver Bow Creek/Butte Area NPL Site Draft 2021 Site-Wide Surface Water Data Summary Report.
- Received and reviewed BPSOU Silver Bow Creek/Butte Area NPL Site Draft 2021 Groundwater Data Summary Report.
- Received and reviewed BNSF Railway Company and Union Pacific Railroad's March 2022 monthly activity report for the Butte Priority Soils Operable Unit.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding– March 2022 Monthly Report.
- Attended April meeting for the Watershed Restoration Coalition of the Upper Clark Fork.
- Attended PitWatch Committee Meeting.

D. GIS Activities

Primary work in the reporting period included:

- Edited BSB GIS website links and webmap interface.
- Discussion of ORION Contact, process, and procedures for BSB property ownership updates to State.
- Created a map of 3636 Harrison relative to BPSOU boundaries for Reclamation.
- Researched and created new geocode for Eagle and Copper mine claims.
- Western Montana Railroad ownership inquiry.
- GIS/Land Records process to update CAMAS and Cadastral.
- Inquiry to shafts and hazards near selected BRES sites for Eric Hassler.
- Researched SDE connection and login setup for remote access for Woodard Curran/RMAP Database.
- Edited Atlantic Richfield/BSB land transfer map template for Reclamation.
- Map of selected property ownership in Rocker for Art Dick.

- Resolved issue with permitting software and cadastral relationship and issues associated with Orion.
- Discussed upcoming plans for AR-BSB webmap with Julia Crain for Reclamation.
- Request for meeting to discuss BSB Enterprise access for Woodard Curran.
- Edited stormwater structure map template and features and discuss changes and locations of stormwater Structures with Abby Peltomaa.
- Reviewed and emailed comments to Woodard Curran for sampling form update.
- Imported updated stormwater features and exported updated maps to Abby Peltomaa.
- Met with State Library to discuss parcel update SOPs and procedures with State Library.
- Created stormwater structures permanent file for BPSOU/BRES for Reclamation.
- Discussion about plans for Enterprise integration, updating, and collaboration with State of Montana.
- Meeting with Julia Crain to discuss AR-BSB land transfer and calculations.
- Provided RMAP information requested by Amanda Marinovich to Eric Hassler.
- Meeting to discuss sampling and abatement locations for distribution to the Health Department with Hassler and Crain.
- Reexport Utah Avenue waterline replacement map for Eric Hassler.
- Meeting to discuss historic mercury sources webmapping project with Julia Crain.
- Created basic webmap and webapp of RMAP sampled and abated properties for Amanda Marinovich.
- Created map template for AR-BSB parcel selection and classification for Reclamation.
- Inquiry into Cabbage Patch area boundaries and ownership for Reclamation.
- Exported Silver Bow/Blacktail confluence area utilities to Wil George, State of Montana.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

June 7, 2022

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1595 Wynkoop Street
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Jonathan Morgan
Chief Remediation Counsel
Remediation Division
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Helena, MT 59620-0901

RE: May 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for May 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa", is written over a large, faint, stylized bow graphic that serves as a background for the lower half of the page.

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – May 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during May 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In May, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 34 – Removal of sediment from the inlet outlet structure and disposed of at the MWR. Addition of 6-inch minus to inlet outlet structure for erosion control.
- BRES Site 52 – Addition of 6-inch minus to barren area on steep slope for erosion control. Staging and stock piling of road mix for future projects. Addition of EPA approved fill to berm for erosion control. Addition of road mix to barren area for erosion control.
- BRES Site 78 – Addition of EPA approved fill to sink hole. Replacement of brick pavers back repaired area.
- BRES Site 61E – Addition of 6-inch minus to catch basin for erosion control.
- BRES Site 45 – Addition of 6-inch minus to swale for erosion control. Reestablishment of drain swale from disturbance from paving project. Broadcast seeding of EPA approved seed mix to site.
- BRES Site 159 – Broadcast seeding of EPA approved seed mix to site.
- BRES Site 46 – Broadcast seeding of EPA approved seed mix to site.
- Staging and stock piling of EPA approved fill for use in future projects.
- Removal of snow from site roads and sidewalks and taken to snow storage site.

BRES Program. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In May 2022, no weed control activities were performed.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 30 Excavation and Dirt-Moving Permits during the month of May; 8 within the BPSOU:

- 100 E. Front St. – footings and foundation for new storage building

- 1249 E. Second St. – emergency repair to water service
- 327 N. Wyoming – demolition of uninhabitable house
- Montana St. – bore under Montana St. to extend water main
- 909 W. Quartz St. – replacement of water service
- 2304 S. Dakota – installation of new water and sewer services
- Montana St. – compaction of street patch
- 109 Belle St. – replacement of water service

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During April 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- DD3 – Addition of 12-inch minus to ditch for erosion control.
- DD4 – Removal of sediment from ditch and disposed of at the MWR. Addition of 6-inch minus to ditch for erosion control.
- CB8 – Removal of waste from catch basin and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.
- Snow removed from various storm drains and inlet outlet structures and taken to snow storage sites.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff is currently drafting the 2021 Stormwater System Inspection Report. Comments received from the Agency in February 2021 on the 2020 Stormwater System Inspection Report will be addressed in the cover letter submitted with this report.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in May 2022:

- Attended May Upper Clark Fork Streamflow Group Meeting.
- Received and reviewed the Revised BPSOU 2021 Stormwater BMPs Repair, Inspection Report, and Maintenance Work Plan for the Railroads.

- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding–April 2022 Monthly Report.
- Received and reviewed BPSOU Site-Wide DRAFT 2020 Ground Water and Surface Water Compliance Comparison & Interpretation Technical Memoranda.
- Attended May meeting for the Watershed Restoration Coalition of the Upper Clark Fork.

D. GIS Activities

Primary work in the reporting period included:

- Imported j-23 mine KMZ from Anthony Roth/MBMG.
- Edited AR-BSB webmap with structures, utilities, and zoning.
- Calculated area metrics for AR-BSB land transfer.
- Edited land use/zoning/ webmap/app color hues for mobile clarity.
- Edited Stormwater BPSOU map to include all labels and structure callouts.
- Meeting with Woodard-Curran and Azure to discuss rest service update for RMAP Database to BSB AGOL.
- Imported Saturn Mine KMZ for Anthony Roth/MBMG.
- Meeting to discuss GIS and form updates, future training and ArcPro introduction.
- DEQ and TIFID/Greenway area ownership for Greenway Service District.
- Reviewed ArcPro tools and workflow with Peltomaa/Reclamation Staff.
- Updated symbology and labeling for zoning webmap.
- Discussed workflow of GIS tasks, ArcGIS Enterprise structure and ArcPro transition with Reclamation.
- Edited map template for Silver Lake Water System improvement project cultural survey report.
- Outreach and email of transfer methodology and meeting to discuss with Pioneer.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

BSB Reclamation Staff gave a presentation to NorthWestern Energy employees about human health effects of arsenic and copper; the hazards of stopes, drifts, and shafts; institutional controls on dirt moving and excavation permits; and the Residential Metals Abatement Program.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

July 8, 2022

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Helena, MT 59620-0901

RE: June 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for June 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – June 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during June 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In June, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 37 – Repair to a manmade dug hole along the site edge. Addition of boulders and 12-inch minus to ditch for erosion control.
- BRES Site 71 – Addition of 12-inch minus to ditch for erosion control.
- BRES Site 46 – Addition of EPA approved cover soil to repair barren area. Addition of EPA approved cover soil to parking area. Addition of road mix to barren area on gravel portion of access road.
- BRES Site 68 – Addition of 12-inch minus to slope of site for erosion control.
- BRES Site 45 – Discing and seeding of site edges.
- BRES Site 46 - Discing and seeding of site edges.
- BRES Site 159 - Discing and seeding of site edges.
- Staging and stock piling of EPA approved fill for use in future projects.

BRES Program. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In June 2022, weed control was performed on BRES sites 4, 15, 15E, 40, 41, 42, 43, 174.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 32 Excavation and Dirt-Moving Permits during the month of June; 6 within the BPSOU:

- Iron St. – water main extension, sewer services, and site development
- Greenwood Ave. – waste management and remediation project
- 57 W. Platinum – utility repairs and maintenance
- 1004 Iowa Ave. – replace water service

- 532 S. Clark St. – new deck and stairs
- 81 W. Park St. – excavation of sidewalk

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During June 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- HD1 – Removal of 26 cubic yards of sediment and disposed of at the MWR.
- HD2 – Removal of 22 cubic yards of sediment and disposed of at the MWR.
- HD4 – Removal of 50 cubic yards of sediment and disposed of at the MWR.
- HD5 – Removal of 35 cubic yards of sediment and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff is currently drafting the 2021 Stormwater System Inspection Report. Comments received from the Agency in February 2021 on the 2020 Stormwater System Inspection Report will be addressed in the cover letter submitted with this report.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in June 2022:

- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding–May 2022 Monthly Report.
- Received and reviewed Blacktail Creek Piezometer Installation and Monitoring Well Repair Plan.
- Received and reviewed Draft Final Revised Butte Reduction Works (BRW) Smelter Area Mine Waste Remediation and Contaminated Groundwater Hydraulic Control Site Pre-Design Investigation (PDI) Evaluation Report.
- Attended June meeting for the Watershed Restoration Coalition of the Upper Clark Fork.

D. GIS Activities

Primary work in the reporting period included:

- Prepared AGOL access for Robert Pal.
- Meeting with Billie Marinovich and Julia Crain to discuss transfer methodology, tools, data, and new requests.
- Updated Unreclaimed Sites shapefile from Pioneer.
- Edited and created shapefile based on expanded metric requests for transfers.
- Edited and emailed expanded metric request for transfer.
- Reviewed workflow and protocol for scanning, distribution of files.
- Prepared performance budgets for GIS program.
- Updated and synced of MST AGOL parcel feature for June.
- MST AGOL inquiry to update tools, automation, and parcel updates.
- Prepared ArcCollector and webmap/apps for CFWEP evaluation of Quad 3.
- Printed Quad 3 poster for CFWEP to use in field.
- Fulfilled inquiry regarding Butte housing age by year and average for Environmental Health Nurse.
- Imported Goldfield, Big Six, and Manhattan Mine KMZs from Anthony Roth/MBMG.
- Imported Orion Place and Bettie Giles mine KMZs from Anthony Roth/MBMG.
- Identified average structure age and percent building on and before 1978 in RMAP Expanded and BPSOU areas for Environmental Health Nurse.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
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August 10, 2022

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RE: July 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for July 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – July 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during July 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In July, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 71 – Staging and stock piling of EPA approved fill Addition of 12-inch minus to ditch for erosion control.
- BRES Site 70 – EPA approved fill and 12-inch minus added to build up drop inlet structure for erosion control. Repair to exposed waste area with lime rock and EPA approved cover soil. Screening of existing rock cap and reused in basin that was reshaped.
- BRES Site 4 – Removal of waste from ditch and disposed of at the MWR. Addition of 12-inch minus to build up ditch for erosion control. Addition of limerock to swale.
- BRES Site 56 – Addition of asphalt millings to ditch for erosion control.
- BRES Site 57 – Installation of new ditch along the site edge to replace the grass swale on site. The grass swale was thinning and had a large amount of sediment present. Addition of 6-inch minus to ditch for erosion control.
- BRES Site 72S – Removal of asphalt dumped on site that resulted in a barren area. Addition of EPA approved cover soil to repair the barren area.
- Removal of street sweeping from the Bonanza snow storage site and disposed of at the MWR.
- Staging and stock piling of EPA approved fill for use in future projects.

BRES Program. CFWEPP concluded their field evaluations in early June. BSB Staff will begin QA/QC in August. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In July 2022, weed control was performed on BRES sites 17, 19, 29N, 30, 40, 41, 42, 43, 58, 59, 60, 60A, 60B, 60C, 60D, 60E, 60F, 81, 171, 175, 181, 1503, 2330, 2340, 2350, 2360, 2370, 2380, and 2390.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository.

BSB personnel issued 34 Excavation and Dirt-Moving Permits during the month of July; 14 within the BPSOU:

- 3113 S. Dakota St. – posts and poles for deck extension
- 228 E. Second St. – replace sidewalk
- 27 N. Excelsior Ave – replace sidewalk
- 420 W. Quartz St. – replace sewer service
- 56 E. Mercury St. – repair and restore existing brick walls
- 501 S. Dakota St. – new retaining wall
- 410 N. Washington St. – footing and foundation
- 56 E. Mercury St. – replace sidewalk
- 2900 S. Montana St. – utility repairs and maintenance
- 423 N. Jackson St. – replace water and sewer services
- 744 Empire St. – replace sewer service
- 123 W. Daly St. – sidewalk repair
- 26 E. Silver St. – replace water service
- 821 S. Arizona Ave – replace sidewalk

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During July 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- DD1 – Removal of sediment from ditch and disposed of at the MWR. Removal of vegetation from ditch to create a new swale. Addition of 6-inch minus to build up swale for erosion control. Addition of asphalt millings to site edge for erosion control.
- DD7 – Application of herbicide for weed control.
- Sediment removed from the Seal Terrace ditch and disposed of at the MWR.
- Sediment removal from various catch basins and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the 2021 Stormwater System Inspection Report on July 14, 2022. Comments were received back from the Agency on July 26, 2022, and BSB Staff is drafting responses.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.

- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in July 2022:

- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding--June 2022 Monthly Report.
- Received and reviewed Draft BTC Groundwater Hydraulic Control System Remedial Design Work Plan.
- Received and reviewed Final Blacktail Creek Pumping Test Quality Assurance Project Plan.
- Attended July meeting for the Watershed Restoration Coalition of the Upper Clark Fork.
- Attended July meeting for the Streamflow Group of the Upper Clark Fork.

D. GIS Activities

Primary work in the reporting period included:

- AGOL SDE link troubleshooting; rerouting web services to temp features files.
- Corresponded with ESRI for EA renewal and three-year contract documents and Enterprise upgrade.
- Responded to request for computer specs and ArcPro installations for Department of Reclamation.
- Updated and sync'd AGOL parcel feature with Montana State Cadastral parcel service.
- MIS, ESRI, meeting with consultant and IT to exchange Enterprise system architecture, play engagement to train and analyze IT department.
- Inquiry for RMAP property mapbook and template.
- Troubleshoot RMAP mapbooks.
- GIS update of credentials for bsusers AGOL login for use by Department Reclamation.
- Emailed RMAP survey 123 form to AR for review.
- Billie Marinovich inquiry into tax unit ID and feature availability.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow, Atlantic Richfield, and partners received approval of the Final Butte Priority Soils Operable Unit Community Engagement Plan (CEP) for Remedial Work in early December.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

September 9, 2022

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Jonathan Morgan
Chief Remediation Counsel
Remediation Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

RE: August 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for August 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – August 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during August 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In August, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 60 – Removal of exposed fabric to help vegetation improve. Material disposed of at the MWR. Area disced for vegetative improvement.
- BRES Site 61E – Addition of 12-inch minus to repair gully on site edge.
- BRES Site 150 – Placement of large boulders on site to block access road.
- BRES Site 174 – Maintenance, grubbing, and cleaning of access road. Addition of EPA approved fill and road mix to access road.
- BRES Site 81 – Barren area along walking trail rock lined using 6-inch minus.
- BRES Site 37 – Removal of illegal dumping of trash and disposed of at the landfill.
- BRES Site 41 – Reconstruction of ditch using 6-inch minus.
- BRES Site 42 – Reconstruction of ditch using 6-inch minus.
- BRES Site 43 – Reconstruction of ditch using 6-inch minus.

BRES Program. CFWEF concluded their field evaluations in early July. BSB Staff has begun QA/QC and drafting the BRES 2022 Field Evaluations Summary Report. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In August 2022, weed control was performed on BRES sites 5, 41, 78, 172, and 174.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 37 Excavation and Dirt-Moving Permits during the month of August; 9 within the BPSOU:

- 724 Placer – demolition of house
- 444 W. Broadway St. – sidewalk

- 1222 E. Front St. – NorthWestern Energy gas main and service install
- 843 Lexington Ave. – building primary residence
- 123 W. Daly St. – replace water service
- 230 Missoula Ave. – install curb
- 405 N. Montana – demolition of house
- 320 W. Broadway – fill in vaulted sidewalk
- 2632 S. Montana St. – replace sidewalk

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During August 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- CB8 – Removal of sediment from sediment trap and disposed of at the MWR.
- DD16 – Removal of sediment from ditch and disposed of at the MWR.
- HD5 – Removal of sediment from HDD and disposed of at the MWR.
- HD1 – Removal of sediment from HDD and disposed of at the MWR.
- DD4 – Removal of sediment from ditch and disposed of at the MWR.
- HD4 – Removal of sediment from HDD and disposed of at the MWR. Weed control performed using the weed eater.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the 2021 Stormwater System Inspection Report on July 14, 2022. Comments were received back from the Agency on July 26, 2022, and BSB Staff is drafting responses.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in August 2022:

- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding–July 2022 Monthly Report.
- Received and reviewed 2022 Final Revised BRW Phase II QAPP.

- Received and reviewed Final Blacktail Creek Pumping Test Quality Assurance Project Plan.
- Received and reviewed BPSOU 2021 SW DSR Response to Agency Comments.
- Attended meeting for the Uncontrolled Surface Flow Area Site Visits.

D. GIS Activities

Primary work in the reporting period included:

- AGOL SDE link troubleshooting; rerouting web services to temp features files.
- Reclamation, RMAP, meeting with Woodard-Curran to discuss mapbook, models, and ArcMap vs. ArcPro templates.
- Reclamation, RMAP, Crain and Peltomaa, meeting to discuss internal AGOL training of RMAP staff.
- Reclamation, RMAP, edit of Sample Point collection template and webmap with RMAP expanded and exclusion areas.
- Reclamation, RMAP, Crain, request for AGOL upload of RMAP expanded and exclusion areas.
- Reclamation, RMAP, created major topics of interest for RMAP staff training in GIS/AGOL.
- Site visit to Greenway planned sites and built infrastructure areas, prepare for Durant Canyon and Miles Crossing.
- Reclamation, Peltomaa, imported and printed Clark Mill poster.
- Reclamation, Peltomaa, created map template of Clark Mill sites, aerial, and haul routes.
- Parks & Rec, LeProwse, email to view and share ADL cemeteries in story map.
- MIS, GIS, check-in on ESRI Agreement, quote, and payment.
- Reclamation, AGOL O&M troubleshooting for updated database link to feature information.
- Reclamation, BRES, request for update of submitted maps for clarity and legibility.
- Worked on Census statistics BPSOU for Julia Crain.
- Work with Will S. from Woodard & Curran to agree that we send .dwg file and pass along information for the Lexington Ave Water Main replacement.
- Reclamation, Crain, Peltomaa, touch base and review for RMAP and BRES processes, databases, and incoming requests.
- Reclamation, Crain, created basic BPSOU area map and associated census data for Julia Crain.
- Reclamation, Hassler, inquiry to Minah/Buffalo area water infrastructure location.
- WGM Group, Mace Mangold, inquiry to topo and infrastructure availability.
- Reclamation, Woodard-Curran, provide David Dobrinen with BSB file structure for RMAP T drive to establish file geodatabase for AGOL/storymaps.
- Reclamation, Woodard-Curran, David Dobrinen, troubleshoot Portal access for ArcPro for RMAP storymap and data driven pages login/user.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow Department of Reclamation staff led a professional development day for middle and high school science teachers for the Butte School District on August 24th, 2022.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

October 10, 2022

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Senior Assistant Regional Counsel
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1595 Wynkoop Street
Denver, CO 80202

Jonathan Morgan
Chief Remediation Counsel
Remediation Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

RE: September 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for September 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – September 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during September 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In September, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 41 – Removal of sediment from ditch and disposed of at the MWR. EPA approved fill added to ditch for erosion control.
- BRES Site 39 – Addition of 6-inch minus to ditch on site for erosion control.
- BRES Site 32 – Removal of sediment from ditch and disposed of at the MWR. Addition of 6-inch minus to swale and ditch on site for erosion control.
- BRES Site 37 – Addition of 6-inch minus to ditch on site for erosion control.
- BRES Site 30 - Addition of 6-inch minus to ditch on site for erosion control.

BRES Program. CFWEF concluded their field evaluations in July. BSB Staff is in the process of performing QA/QC and drafting the BRES 2022 Field Evaluations Summary Report. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In September 2022, no weed control was performed on BRES sites.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 38 Excavation and Dirt-Moving Permits during the month of September; 9 within the BPSOU:

- 108 S. Arizona – repair water service
- 17 E. Galena – repair water line
- 1118 California Ave. – install new water services
- 123 W. Daly St. – replace water service
- 320 W. Broadway – fill in vaulted sidewalk
- 2632 S. Montana – replace sidewalk
- 230 W. Missoula – construct new deck
- 238 S. Idaho St. – emergency sewer service

- 928 Utah Ave. – sewer repair

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During September 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- CB8 – Removal of trash from inlet outlet structure and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the 2021 Stormwater System Inspection Report on July 14, 2022. Comments were received back from the Agency on July 26, 2022, and BSB Staff is drafting responses.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in September 2022:

- Finalized Sponsored Research Agreement with Montana Technological University for Domestic Well Sampling Program.
 - Sponsored Research Agreement will allow for the expansion of the domestic well sampling program with sampling to be performed by the Montana Bureau of Mines and Geology.
 - Sampling of domestic wells will begin this fall and continue in the spring of 2023.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding–August 2022 Monthly Report.
- Attended BPSOU Site Wide Groundwater Modeling Technical Meeting.
- Received and reviewed Final Revised Butte Reduction Works (BRW) Phase I Quality Assurance Project Plan.

D. GIS Activities

Primary work in the reporting period included:

- Created a webmap and webapp for census tract boundary streets for Environmental Health Nurse/RMAP Program.
- Discussion of deliverables, documentation, and protocol server locations between GIS and Reclamation.
- Provided notification of staffing changes to Woodard Curran and David Dobrinen.
- Notification to ESRI of new representative and point of contact for GIS team.
- Resolution of ArcMap licensing issue within Dept. of Reclamation/Crain.
- Follow-up with Planning Dept. regarding ESRI Enterprise agreement.
- Updated Snow Management Routes map for Eric Hassler; sent updated snow management plan to Dept. of Reclamation/Hassler.
- Meeting to discuss map of Silver Bow Homes for RMAP sampling.
- Met with Julia Crain to revise Silver Bow Homes map and FSP, attributed all revised data and sent table to Abby Peltomaa for review. Built a basic template of a map book for RMAP maps moving forward.
- Created a draft map book for Dept. of Reclamation/Crain for Silver Bow Homes FSP maps for EPA review and feedback.
- Created login for EPA to access AGOL.
- Fulfilled a request for stormwater data for Anderson Shaft Area for Pioneer Technical/Gillis with Hassler approval.
- Completed preliminary revisions to the Silver Bow Homes map book.
- Explained the status of ArcGIS Enterprise system and the parcel layer impacting RMAP Database and RMAP GIS tools.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow Department of Reclamation staff led a professional development day for middle and high school science teachers for the Butte School District on August 24th, 2022.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
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November 10, 2022

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Helena, MT 59620-0901

RE: October 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for October 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – October 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during October 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In October, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 42 – Addition of 6-inch minus to ditch for erosion control.
- BRES Site 59 - Addition of 6-inch minus to ditch for erosion control. Removal of trash from ditch and disposed of at landfill.
- BRES Site 177 – Removal of sediment from the ditch and disposed of at the MWR.

BRES Program. CFWEF concluded their field evaluations in July. BSB Staff is in the process of performing QA/QC and drafting the BRES 2022 Field Evaluations Summary Report. BSB Staff received agency comments regarding the Draft 2021 BRES Field Evaluations Summary Report and Draft 2021 BRES CAPS Report in March and are drafting responses.

Vegetation and Weed Controls. In October 2022, no weed control was performed on BRES sites.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 39 Excavation and Dirt-Moving Permits during the month of October; 19 within the BPSOU:

- 2537 Placer – single family residence
- Placer Street – single family residence
- 605 S. Idaho St – replace/remodel garage and backroom
- 22 W. Park – fill in vaulted sidewalk
- 839 N. Montana St. – construct carport
- 2656 S. Montana St. – set house on lots
- 1130 Missouri Ave – repair foundation
- 616 N. Alaska – remove and replace elevated deck
- 608 S. Washington St. – sidewalk replacement
- 106 Mullin St. – repair sewer service
- 1165 W. Steele St. – emergency water service replacement

- 647 Travonia St. – replace water and sewer service
- 650 S. Clark St. – build garage
- 650 S. Clark St. – build elevated deck
- 400 S. Clark St. – foundation/pad, replace existing MRI chiller and indoor cooling unit
- 214 S. Washington St. – emergency water service repair
- 659 S. Main St. – foundation work
- 661 S. Main St. – foundation work
- 856 W. Granite St. – replace water service

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During October 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- DD7 – Addition of 6-inch minus to ditch for erosion control.
- DD16 – Removal of sediment from ditch and disposed of at the MWR.
- HD1 - Sediment removed from HDD and disposed of at the MWR.
- HD2 - Sediment removed from HDD and disposed of at the MWR.
- HD3 – Sediment removed from HDD and disposed of at the MWR.
- HD4 - Sediment removed from HDD and disposed of at the MWR.
- HD5 - Sediment removed from HDD and disposed of at the MWR.
- CB5 – Removal of sediment from catch basin and disposed of at the MWR.
- CB7 - Removal of weir plates and drawing down catch basin to provide holding capacity for spring 2023 snow melt. Removal of sediment from catch basin and disposed of at the MWR. Addition of 12-inch minus to ditch for erosion control. Extension of inlet outlet structure with addition of culvert pipe.
- CB8 – Removal of weir plates and drawing down catch basin to provide holding capacity for spring 2023 snow melt. Removal of sediment from catch basin and disposed of at the MWR.
- CB9 - Removal of weir plates and drawing down catch basin to provide holding capacity for spring 2023 snow melt. Removal of sediment from catch basin and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the revised 2021 Stormwater System Inspection Report on October 13, 2022. The report was approved on October 17, 2022.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.

- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in October 2022:

- In coordination with Montana Bureau of Mines and Geology, conducted domestic well sampling for the Clark Tailings/Old Landfill Controlled Groundwater Area.
 - Analytical results for the domestic wells are expected in early November.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding–September 2022 Monthly Report.
- Received and reviewed Butte Mine Flooding Annual Report for 2021.
- Received and reviewed Final BPSOU Subdrain Pump Station Remedial Design Work Plan.
- Attended Watershed Restoration Coalition of the Upper Clark Fork Meeting.

D. GIS Activities

Primary work in the reporting period included:

- Assisted MIS with licensing issues related to GIS and computer upgrades.
- Prepared and updated Silver Bow Homes sampling map set. Continued work on Silver Bow Homes sampling and began building map book (16 hours total).
- Housekeeping for ESRI resources and information including Enterprise.
- Troubleshooting issues with Enterprise license.
- Enterprise training for database access is currently under development with assistance from ESRI.
- Identified the location of the BRES Site file including rock outcroppings.
- Meeting with ESRI representatives with Planning, Reclamation, and GIS.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

Butte-Silver Bow Department of Reclamation staff attended the EPA Community Meeting on August 24th.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

December 9, 2022

Nikia Greene
EPA Region 8, Montana Office
Baucus Federal Building
10 West 15th Street, Ste. 3200
Helena, MT 59624

Daryl Reed, State Project Officer
Remediation Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Erin Agee
Senior Assistant Regional Counsel
CERCLA Enforcement Section
Office of Regional Counsel
US EPA Region 8 Montana Office
1595 Wynkoop Street
Denver, CO 80202

Jonathan Morgan
Chief Remediation Counsel
Remediation Division
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

RE: November 2022 Monthly Report of Activities
Butte Priority Soils Operable Unit
2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

Ladies and Gentlemen:

Pursuant to Appendix D to the BPSOU Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, Butte-Silver Bow submits the attached Monthly Report for activities performed at the Silver Bow Creek/Butte Area Superfund Site. This monthly report covers work activities for November 2022.

Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

A handwritten signature in blue ink, appearing to read "Abby Peltomaa".

Abby Peltomaa

Attachment: Monthly Report

CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – November 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during November 2022.

I. Operations and Maintenance Activities

A. Source Areas/Butte Reclamation Evaluation System (BRES)

Routine O&M. In November, Source Area maintenance crews continued performing maintenance activities across reclaimed areas of the Butte Hill. This past month, BSB Crews completed routine O&M tasks including trash pickup and disposal, fence repairs, and stormwater sediment basin, culvert, and inlet cleanout. Specific site work that was performed included:

- BRES Site 121 – Creation of established walking trail across site due to pedestrian foot traffic. Vegetation removed and road mix added to establish trail. Boulders were placed to establish the boundaries of the new trail. Addition of 6-inch minus to ditch for erosion control. After completion of project, someone moved the boulders to gain access to the site. The boulders were once again placed along the trail to prevent future access across the site.
- Removal of snow from walkways, MWR, and the Granite Mountain Memorial and taken to the snow storage site.

BRES Program. CFWEF concluded their field evaluations in July. BSB Staff is in the process of performing QA/QC and drafting the BRES 2022 Field Evaluations Summary Report. BSB Staff submitted the Revised 2021 BRES CAPs report on November 2, 2022 and await agency response. BSB staff also submitted the Revised 2021 BRES Summary Report on November 18, 2022, and the 2021 Annual Operation and Maintenance Report on November 18, 2022 and await agency response.

Vegetation and Weed Controls. In November 2022, no weed control was performed on BRES sites.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 14 Excavation and Dirt-Moving Permits during the month of November; 6 within the BPSOU:

- 679 S. Alabama – replace the water service
- 1331 Farrell St. – foundation/basement construction
- 1608 N. 1st St. – replace section of the sewer service
- 650 S. Clark St. – construction of sidewalk, curb, and gutter
- 533 E. Park St. – replace the sewer service
- 524 N. Franklin St. – replace the sewer service

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During November 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- CB8 – Removal of snow from inlet structure.
- Removal of snow from various inlet outlet structures and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the revised 2021 Stormwater System Inspection Report on October 13, 2022. The report was approved on October 17, 2022.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

MPDES Storm Water Permit Assistance & Monitoring – MS4: MPDES Storm Water Permit Assistance & Monitoring – MS4: Butte-Silver Bow and its consultants continue to implement requirements of its Municipal Separate Storm Sewer System (MS4) permit. The MS4 permit requires that BSB develop a Storm Water Management Program (SWMP) that addresses six control measures: public education, public involvement, illicit discharge detection and elimination (IDDE), construction site storm water control, post-construction site storm water control, and pollution prevention/good housekeeping. Activities completed under each control measure are detailed below:

- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in November 2022:

- In coordination with Montana Bureau of Mines and Geology, conducted domestic well sampling for the Clark Tailings/Old Landfill Controlled Groundwater Area.
 - Analytical results have been received and letters are being drafted and will be sent to property owners.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding 2022 Monthly Report.
- Received and reviewed BPSOU Site-Wide Surface Water 3rd Quarter 2022 Report.
- Received and reviewed Silver Bow Creek/Butte Area NPL Site 2023 Draft Final Butte Priority Soils Operable Unit Interim Site-Wide Groundwater Monitoring Quality Assurance Project Plan (QAPP).
- Attended Upper Clark Fork Streamflow Working Group Meeting.

D. GIS Activities

Primary work in the reporting period included:

- Meeting to resolve licensing issues with ESRI Enterprise System and impacts to ArcMap and AGOL.
- Troubleshooting issues with licensing on desktop computers.
- Stored source area files acquired from Pioneer Technical on the server.
- Responded to inquiry on updated aerial photography and noted still using 2016.
- Planning for map templates for RMAP and BRES, including maps for 2022 BRES Evaluations.
- Began conversion of KML to Shapefile received from Julia Crain via CDM Smith; procedure to convert to shapefile and retain attribute data.
- Prepared a map of Copper Mountain utility infrastructure for Eric Hassler, Dept. of Reclamation.
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

In November, 306 users visited BPSOU.com for a total of 327 sessions averaging 43 minutes. Four of the 306 visitors were return visitors from October, which means 302 new entities visited the site. Of the 306 users, 86% were direct visitors and 12% arrived at the site organically.



THE CITY-COUNTY OF Butte-Silver Bow

Department of Reclamation &
Environmental Services
Abby Peltomaa, Manager, Data Management Division
Ph: 406-497-5045 E-Mail: apeltomaa@bsb.mt.gov

January 10, 2023

Nikia Greene
EPA Region 8, Montana Office
Baucus Federal Building
10 West 15th Street, Ste. 3200
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Helena, MT 59620-0901

RE: December 2022 Monthly Report of Activities
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2020 Butte Priority Soils Operable Unit Consent Decree – Civ. Action No. 89-039-BU-SEH

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Please contact me (497-5045) if you have any questions about the information in the report or need additional information about Butte-Silver Bow's work activities.

Sincerely,

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Abby Peltomaa

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CC: Josh Bryson, AR Project Manager
BSB Personnel
E-Mail version sent to List-Serve

Monthly Report – December 2022
Butte Priority Soils Operable Unit
Silver Bow Creek/Butte Area Superfund Site
Civ. Action No. 89-039-BU-SEH

As required by Appendix D to the Consent Decree, BPSOU Statement of Work, Section 5.0 Reporting, the City and County of Butte-Silver Bow provides this monthly report on work activities. The work activities described in this report are consistent with the directives contained in the Remedial Action Work Plan, and cover those efforts performed by Butte-Silver Bow during December 2022.

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Vegetation and Weed Controls. In December 2022, no weed control was performed on BRES sites.

Institutional Controls (ICs). Butte-Silver Bow continues to manage its responsibilities to the Institutional Controls Program through education and training in Best Management Practices for stormwater and sediment controls, excavations of hazardous waste, and providing access to the Mine Waste Repository. B-SB personnel work closely with local utility companies including NorthWestern Energy, Charter/Spectrum, Qwest, and others to coordinate Street Opening permits, Excavation & Dirt-Moving permits, and others.

Excavation Review and Oversight. BSB personnel continue to monitor excavation and dirt-moving activities throughout the basin, including monitoring permitted projects issued in previous months. Coordination with contractors requires continued monitoring of access to the Mine Waste Repository. BSB personnel issued 13 Excavation and Dirt-Moving Permits during the month of December; 7 within the BPSOU:

- 1340 Harrison Ave – install antennas, Commscope platform, RRU's, hybrid cable, concrete pad, ice bridge, equipment cabinets, power conduit, Telco conduit, Telco fiber box, SPS unit, meter socket safety switch, fiber NID
- 405 N. Montana – demolition of house
- 141 W. Pacific St. – replace footing and foundation wall
- 84 S. Ohio – new commercial building for Mountain West Physiological Resources
- S. Excelsior and Parnell Lode – rebuild transmission
- 133 E. Aluminum – shut off water and demolition of house
- Mammoth Drive – construction of new shop

Mine Waste Repository Maintenance. The Mine Waste Repository continued operation with all active dumping directed to the lower, eastern bench which continues to be monitored and maintained on a regular basis.

- The materials on the lower deck of the repository were pushed off.

B. Storm Water Operations and Maintenance Activities

During December 2022, standard routine work activities were completed. In addition to inspections and monitoring of facilities, BSB Crews completed the following:

- DD7 – Staging and stock piling of 12-inch minus for future projects.
- Removal of snow from various inlet outlet structures and disposed of at the MWR.
- Continuous monitoring of Syndicate Pit, CB8, CB9 and HDDs.

Superfund Storm Water Structures Inspections: BSB Reclamation Staff submitted the revised 2021 Stormwater System Inspection Report on October 13, 2022. The report was approved on October 17, 2022.

Superfund Storm Water Structures Operations and Maintenance Plan: Butte-Silver Bow has received approval on this plan and will resubmit to reference the reclaimed areas QAPP.

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- Monitoring, Recording and Reporting Requirements for the General Permit.
- Butte-Silver Bow Public Works and its consultants provide engineering support and assistance in reviewing storm water design plans for proposed developments in Butte, as required by the City-County Storm Water Ordinance. Assistance regarding storm water requirements was provided to potential developers as requested.

C. Water Quality District Activities

Water Quality District Completed the following tasks in December 2022:

- In coordination with Montana Bureau of Mines and Geology, conducted domestic well sampling for the Clark Tailings/Old Landfill Controlled Groundwater Area.
 - Analytical results have been received and letters are being drafted and will be sent to property owners.
- Received and reviewed The Draft Final Quarterly Operations and Maintenance Report Butte Treatment Lagoon System – Third Quarter 2022.
- Received and reviewing Draft Final Butte Reduction Works (BRW) Organic Pollutant Surface Water Quality Assurance Project Plan (QAPP).
- Received and reviewing The 60% Buffalo Gulch Construction Plans and Specifications.
- Received and reviewed Montana Bureau of Mines and Geology's Butte Mine Flooding– November 2022 Monthly Report.

D. GIS Activities

Primary work in the reporting period included:

- Map of 35 E. La Platte Street showing property ownership for Dept. of Reclamation/Hassler.
- BPSOU File communication for import to GIS for Dept. of Reclamation/Crain.
- Reviewed 2009 and 2010 BPSOU data and looked for ways to compare and ran basic analysis in preparation for meeting with Dept. of Reclamation/Crain.
- Meeting with Dept. of Reclamation (Peltomaa and Crain) to review BRES Site data.

- Built four applications on AGOL BRES Site Data comparison, RMAP, Hard Copy Map storage, Superfund/Reclamation Map Series. Sent to Peltomaa and Crain for review and feedback.
- Reviewed map series with Hassler and Crain and provided each with unique logins for AGOL and made revisions to BRES Site Data.
- Met with Crain to review RMAP Locations requiring digitization and mapping.
- Digitized RMAP parcels for upcoming sampling (22 hours).
- Exported weekly activity from BRES O&M database to develop weekly reports.
- Performed weekly QA/QC of BSB reclamation data and draft BSB weekly O&M reports for monthly distribution and incorporation into the monthly report.

II. Community Involvement

In December, 296 users visited BPSOU.com for a total of 324 sessions averaging 36 minutes. Of the 296 users, 92% were direct visitors and 7.1% arrived at the site organically.

Butte-Silver Bow MS4 Sediment Removal Tracking 2022

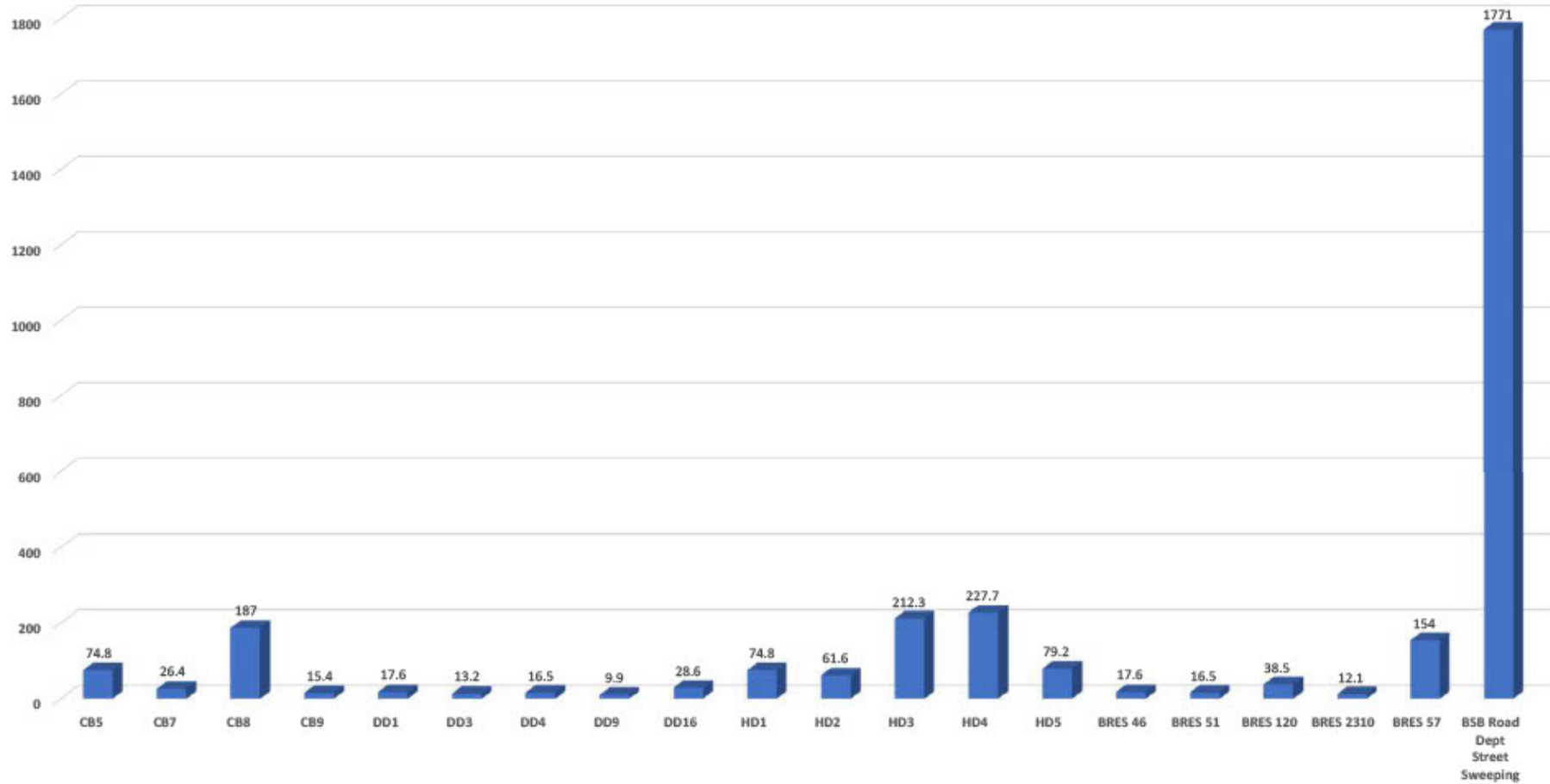
Site	Amount Removed	Material Removed	Units	Repository of Removed Material
CB1	0		yd3	
CB2	0		yd3	
CB3	0		yd3	
CB4	0		yd3	
CB5	68	Sediment	yd3	MWR
CB6	0		yd3	
CB7	34	Sediment	yd3	MWR
CB8	170	Sediment	yd3	MWR
CB9	14	Sediment	yd3	MWR
CB10	0		yd3	
CB11	0		yd3	
DD1	16	Sediment	yd3	MWR
DD2	0		yd3	
DD3	12	Sediment	yd3	MWR
DD4	15	Sediment	yd3	MWR
DD5	0		yd3	
DD6	0		yd3	
DD7	0		yd3	
DD8	0		yd3	
DD9	9	Sediment	yd3	MWR
DD10	0		yd3	
DD11	0		yd3	
DD12	0		yd3	
DD13	0		yd3	
DD14	0		yd3	
DD15	0		yd3	
DD16	26	Sediment	yd3	MWR
DD17	0		yd3	
HD1	68	Sediment	yd3	MWR
HD2	56	Sediment	yd3	MWR
HD3	193	Sediment	yd3	MWR
HD4	207	Sediment	yd3	MWR
HD5	72	Sediment	yd3	MWR
BRES 46	16	Sediment	yd3	MWR
BRES 51	15	Sediment	yd3	MWR
BRES 120	35	Sediment	yd3	MWR
BRES 2310	11	Sediment	yd3	MWR
BRES 57	140	Sediment	yd3	MWR

2022 Sediment Removed	1,167	Cu yds
	1,284	Tons
DSB Street Sweeping	1,610	Cu yds
	1,771	Tons
Total Sediment Removed	2,777	Cu yds
	3,055	Tons

Assumes 1 Cu Yd of Sediment = 2,200 pounds

Baseline Sediment load to Silver Bow Creek -	746	Tons Per year TSS
Removal Requirement -	76%	
Removal Requirement -	567	Tons Per year TSS
TSS - WLA -	179	WLA Tons per year from the MS4 to SBC
Total Removed -	3,055	
Percent of WLA Removed -	539%	

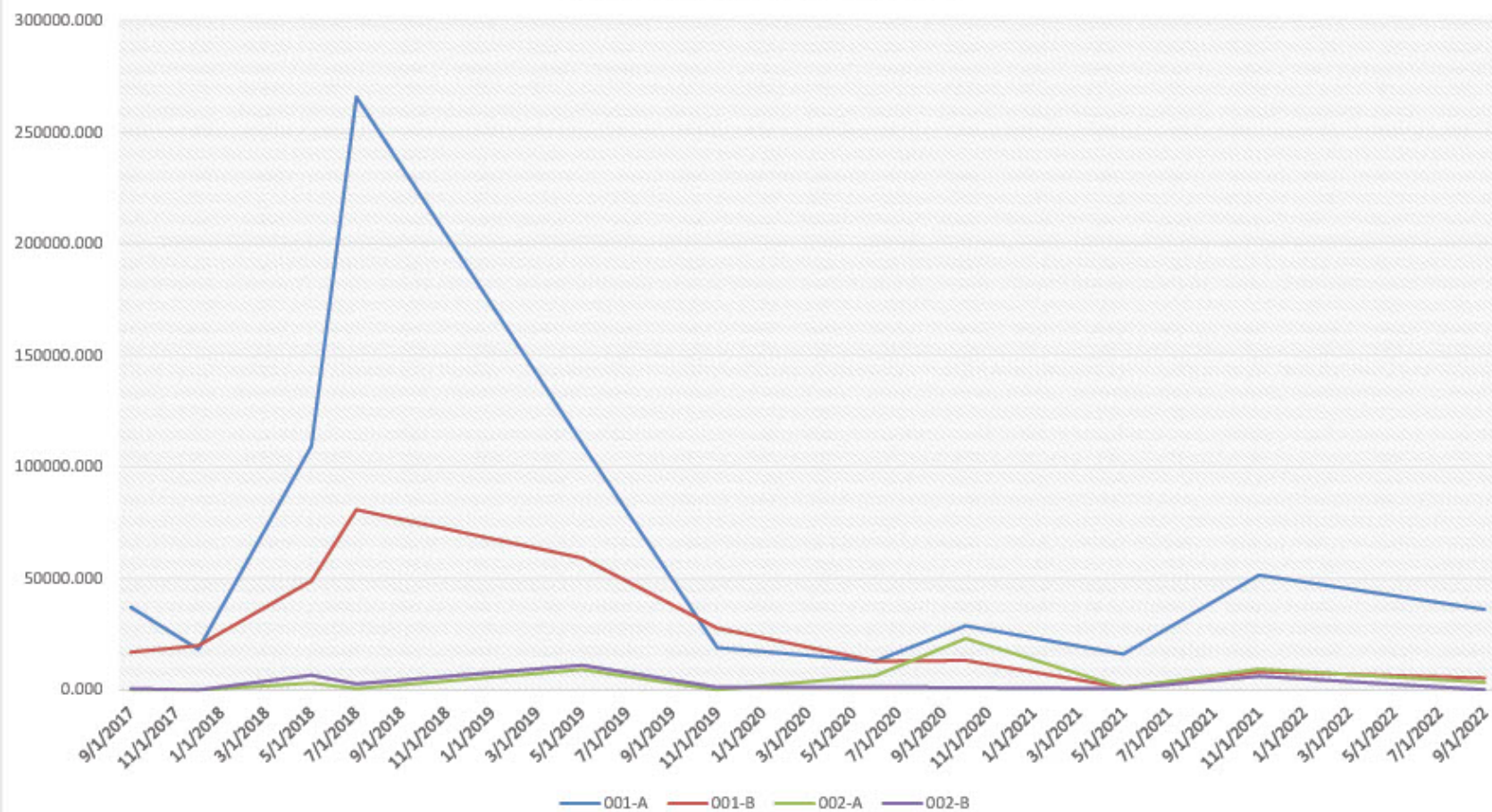
BSB MS4 Sediment Removed 2022
(tons)



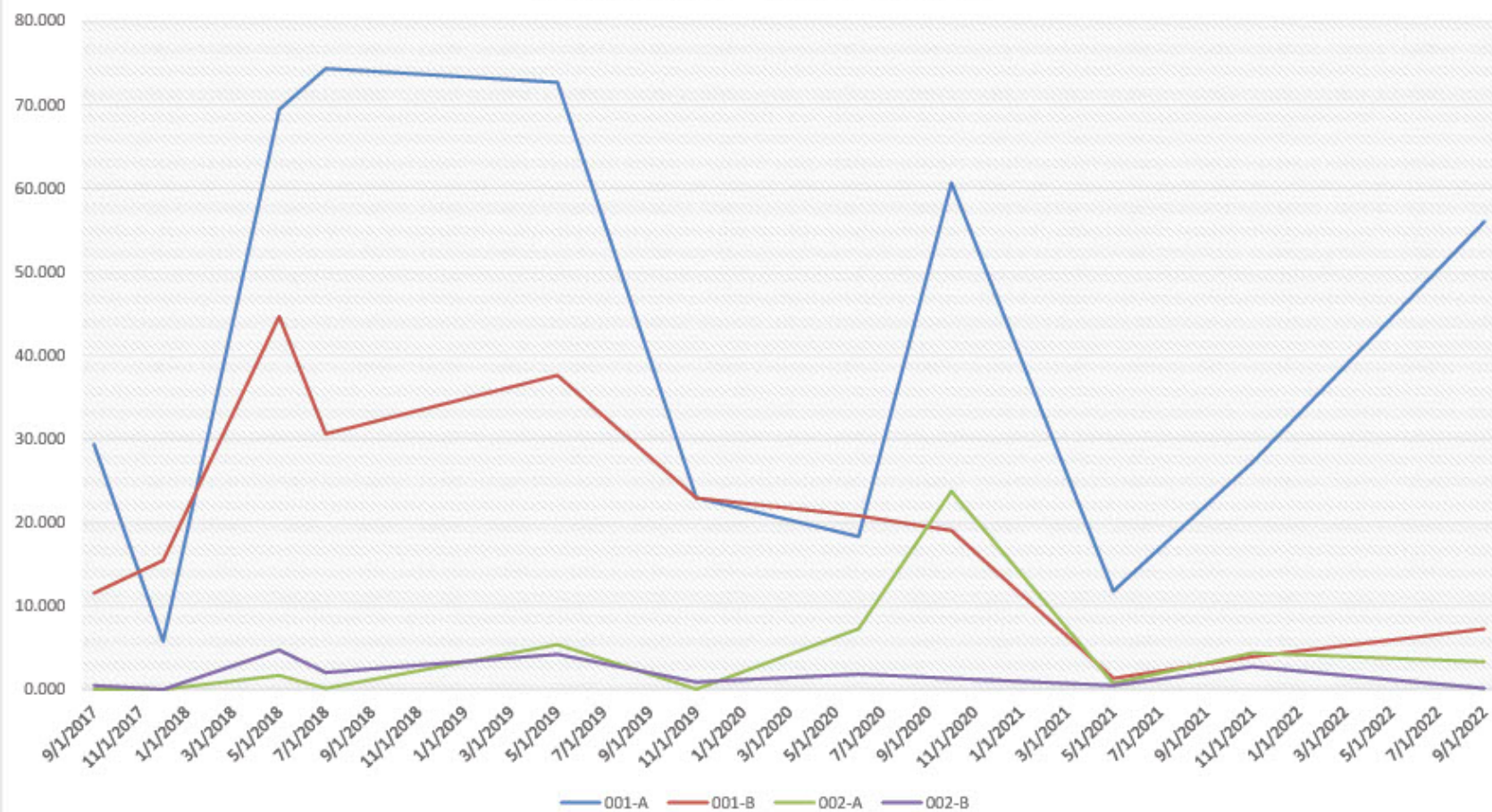
Appendix N
Monitoring and Reporting Summary
Outfalls Table

[illegible]

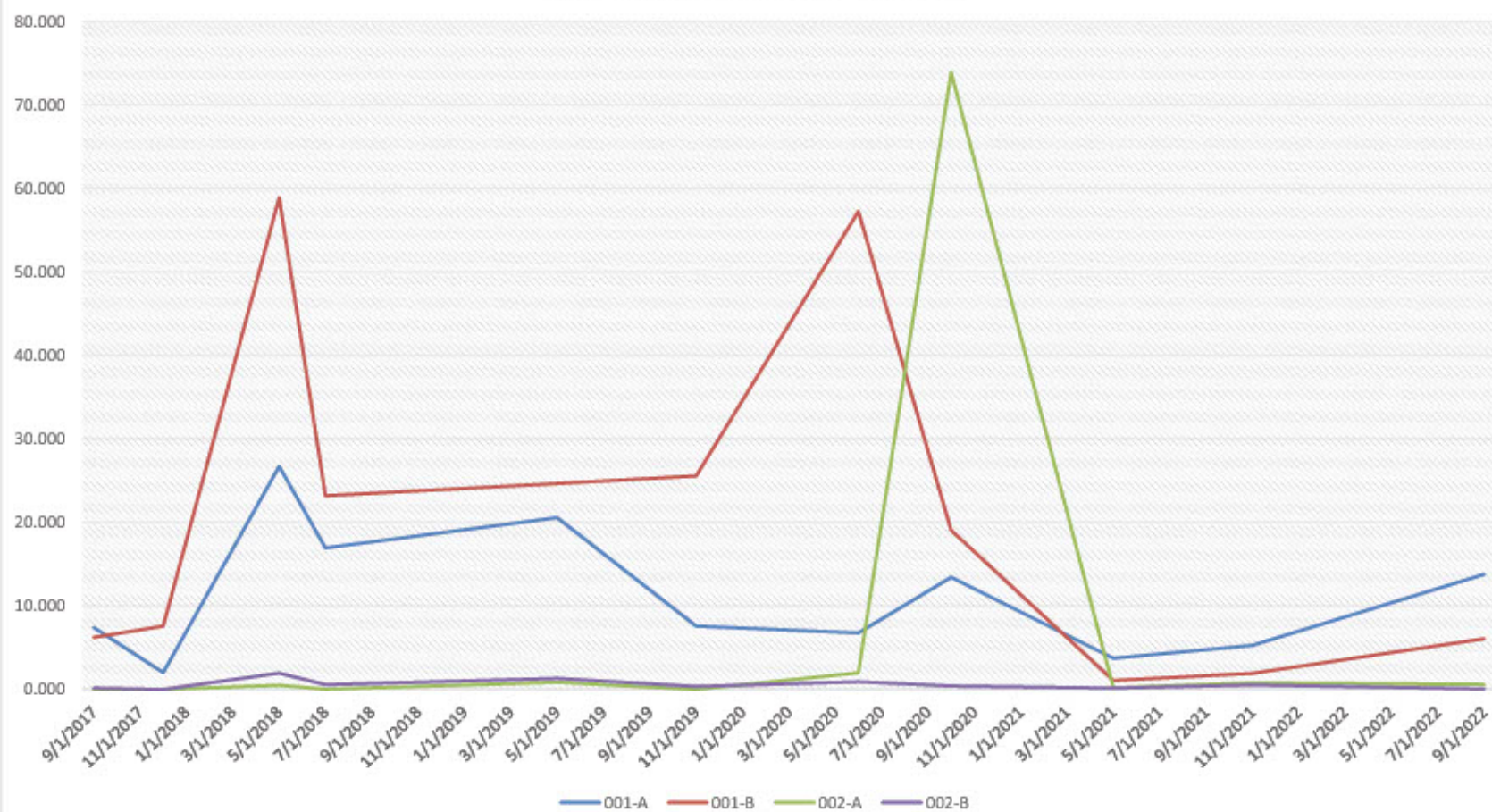
COD Mass Loading - LB/Day



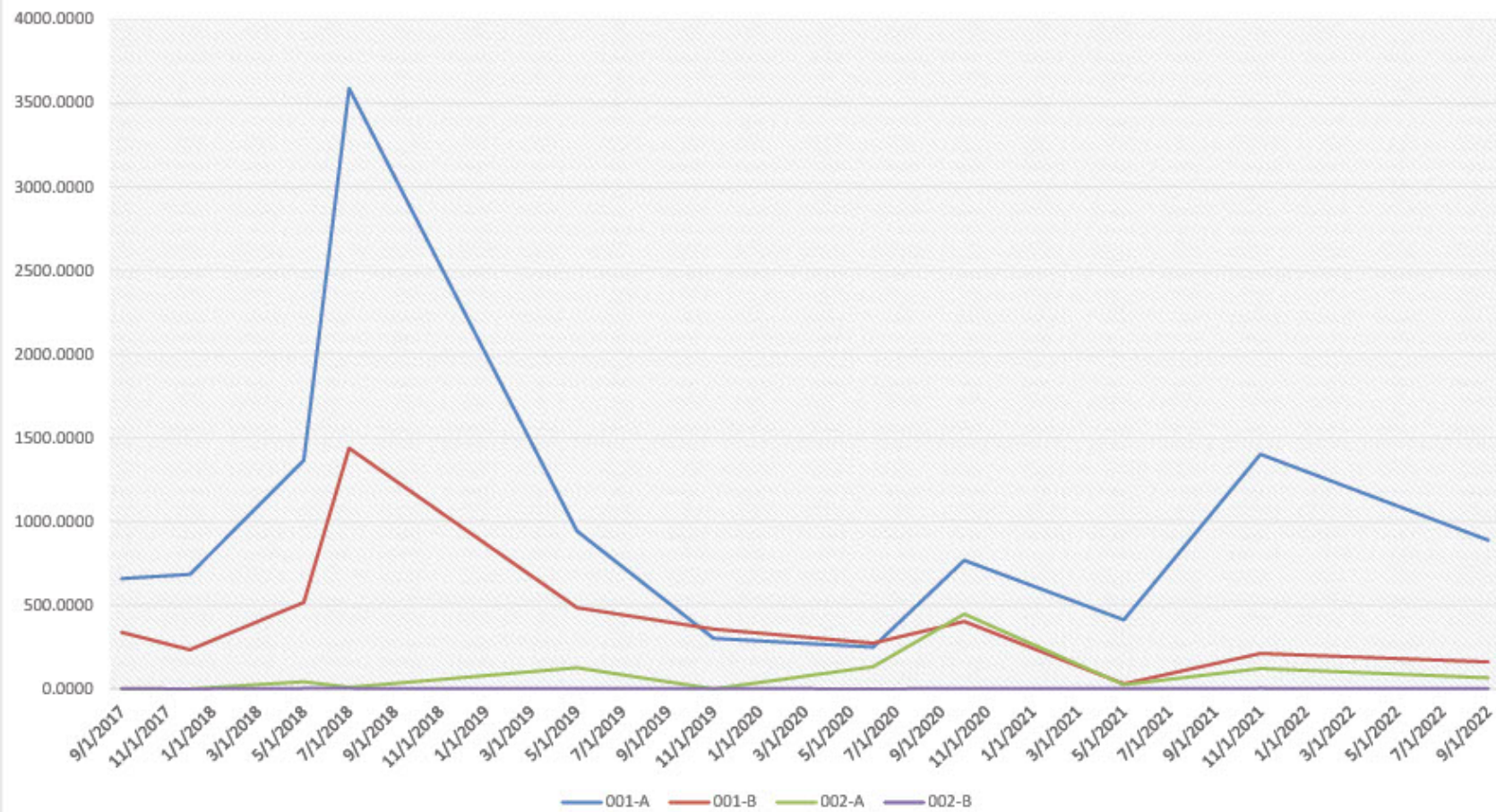
Copper Mass Loading - LB/Day



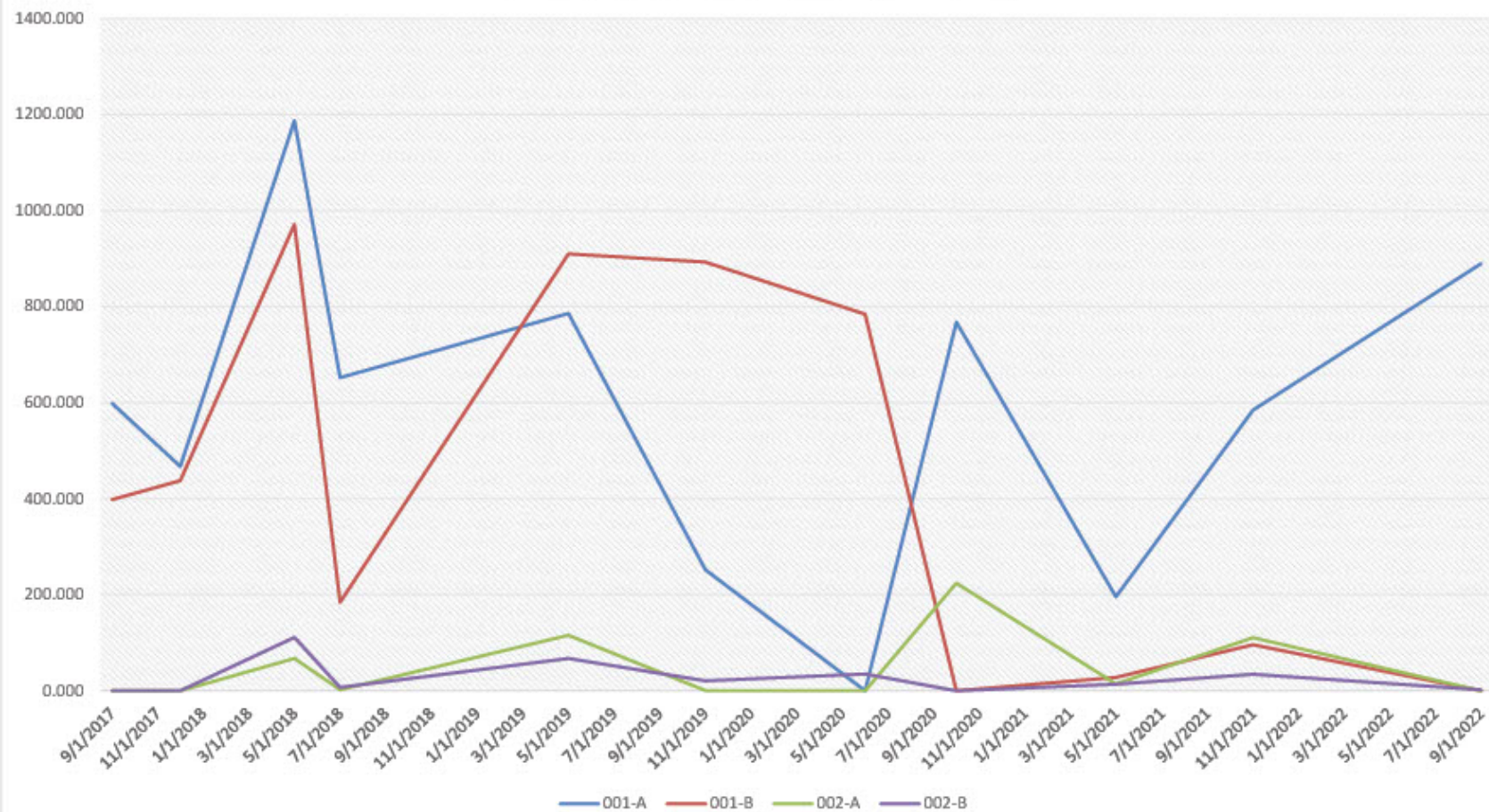
Lead Mass Loading - LB/Day



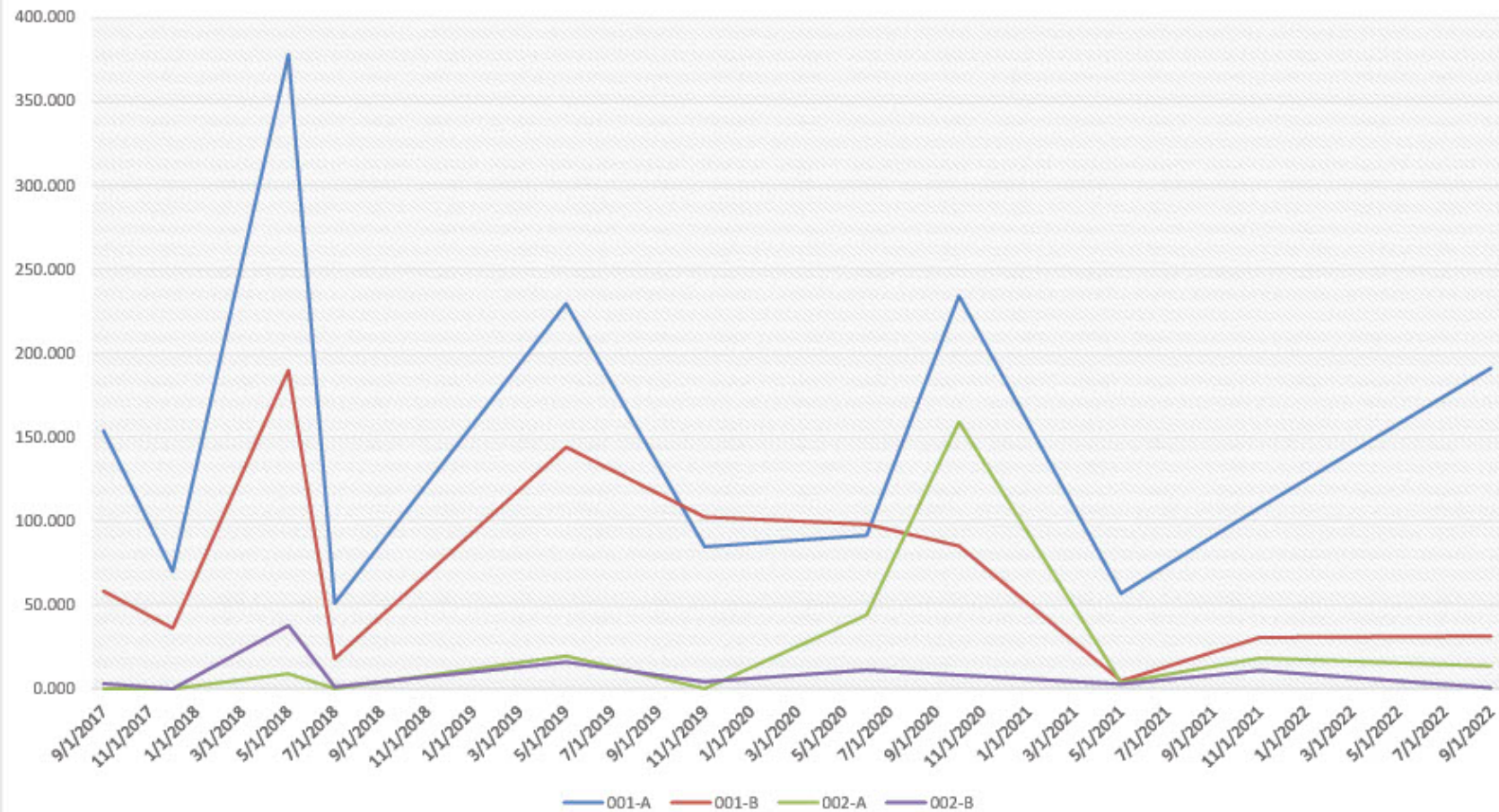
Nitrogen Mass Loading - LB/Day



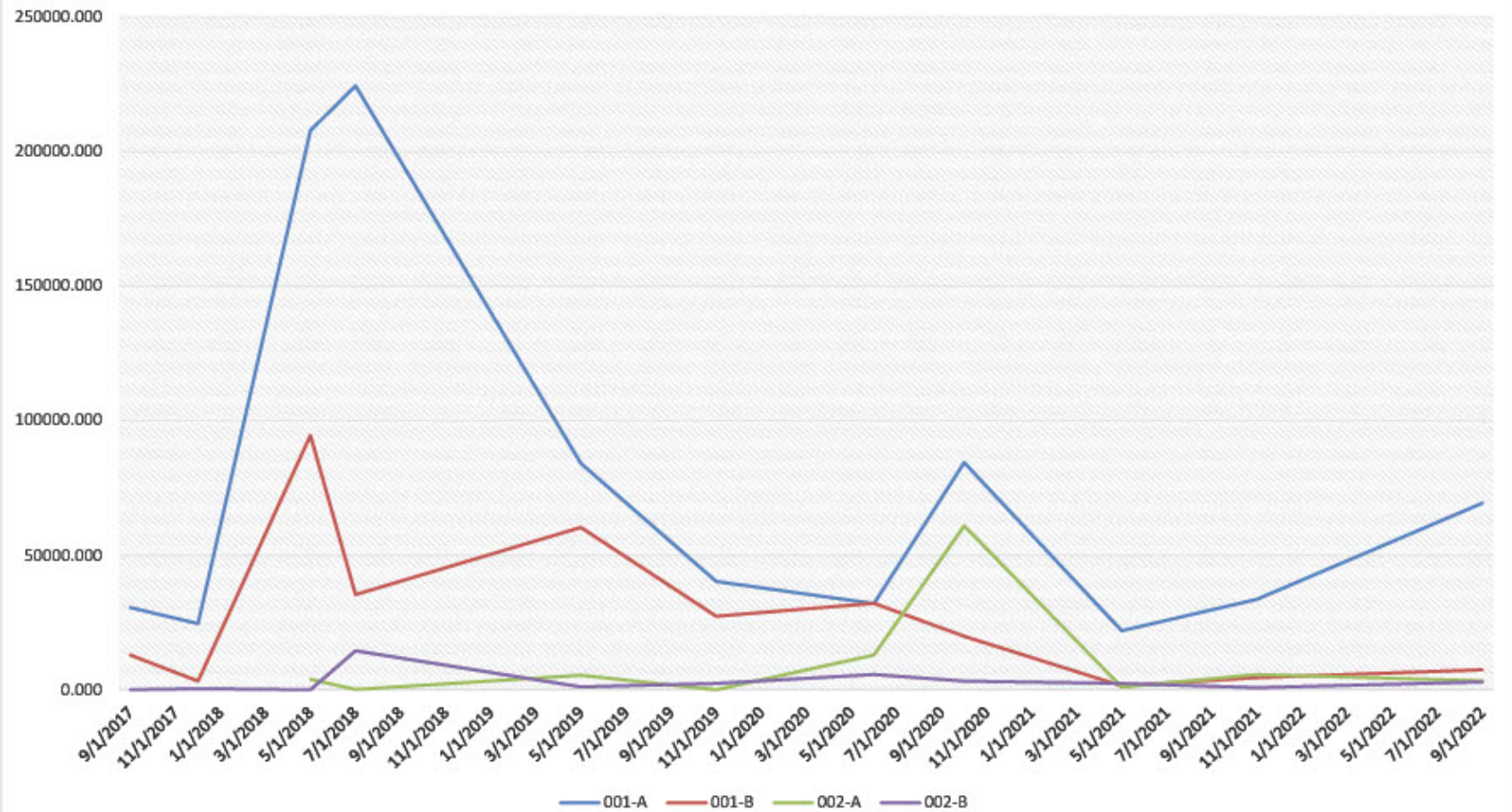
Oil & Grease Mass Loading - LB/Day



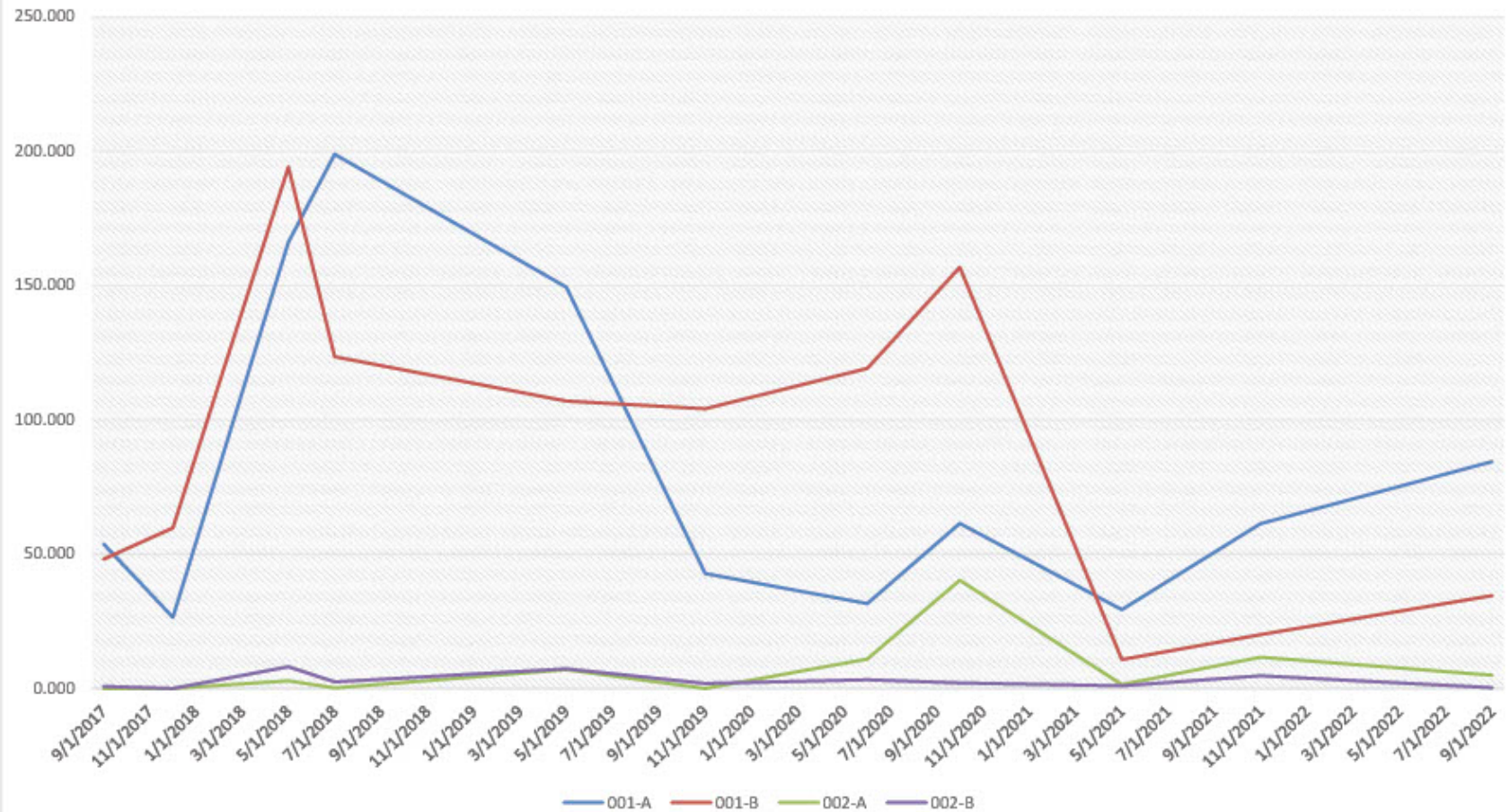
Phosphorus Mass Loading - LB/Day



TSS Mass Loading - LB/Day



Zinc Mass Loading - LB/Day

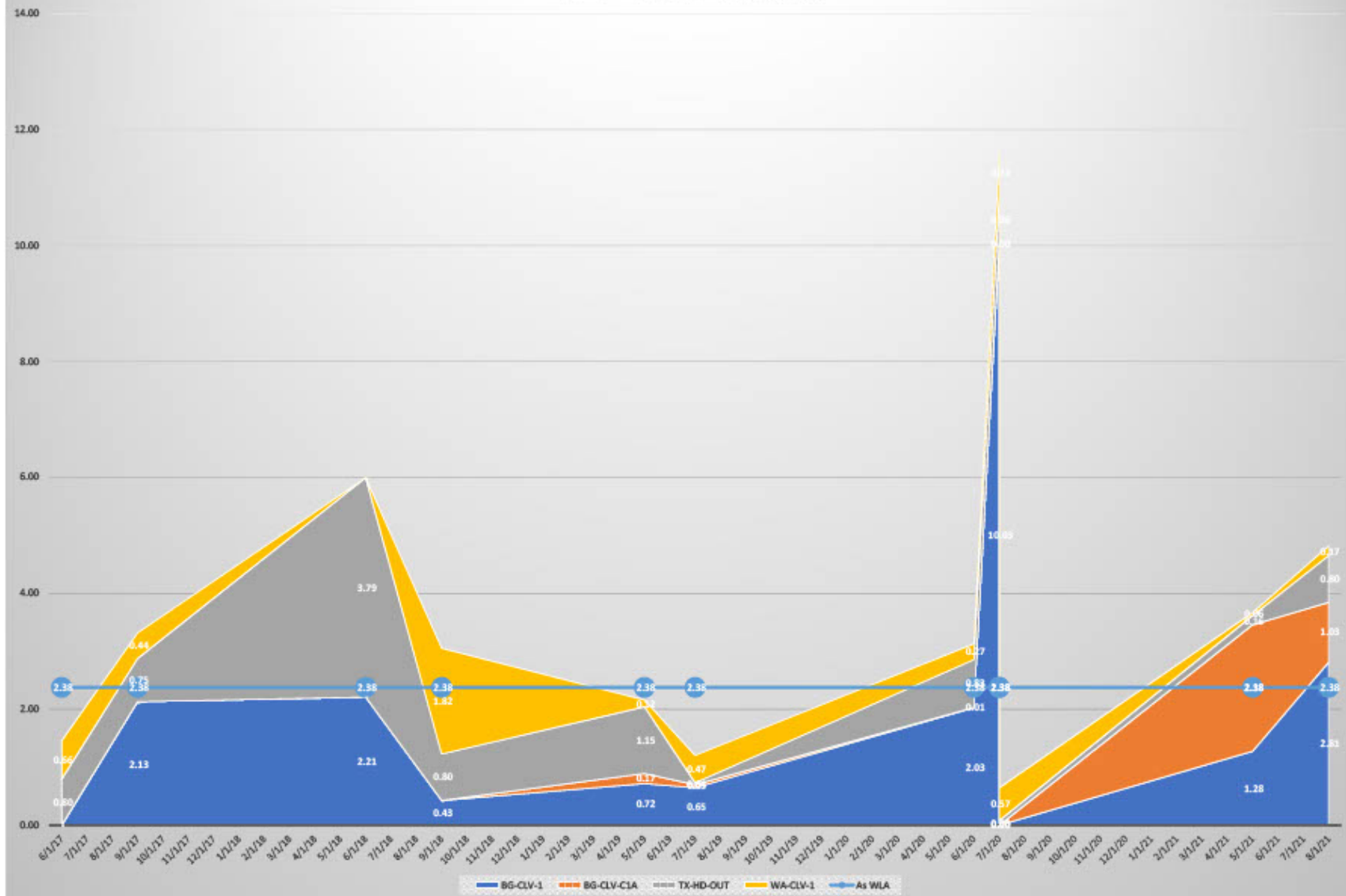


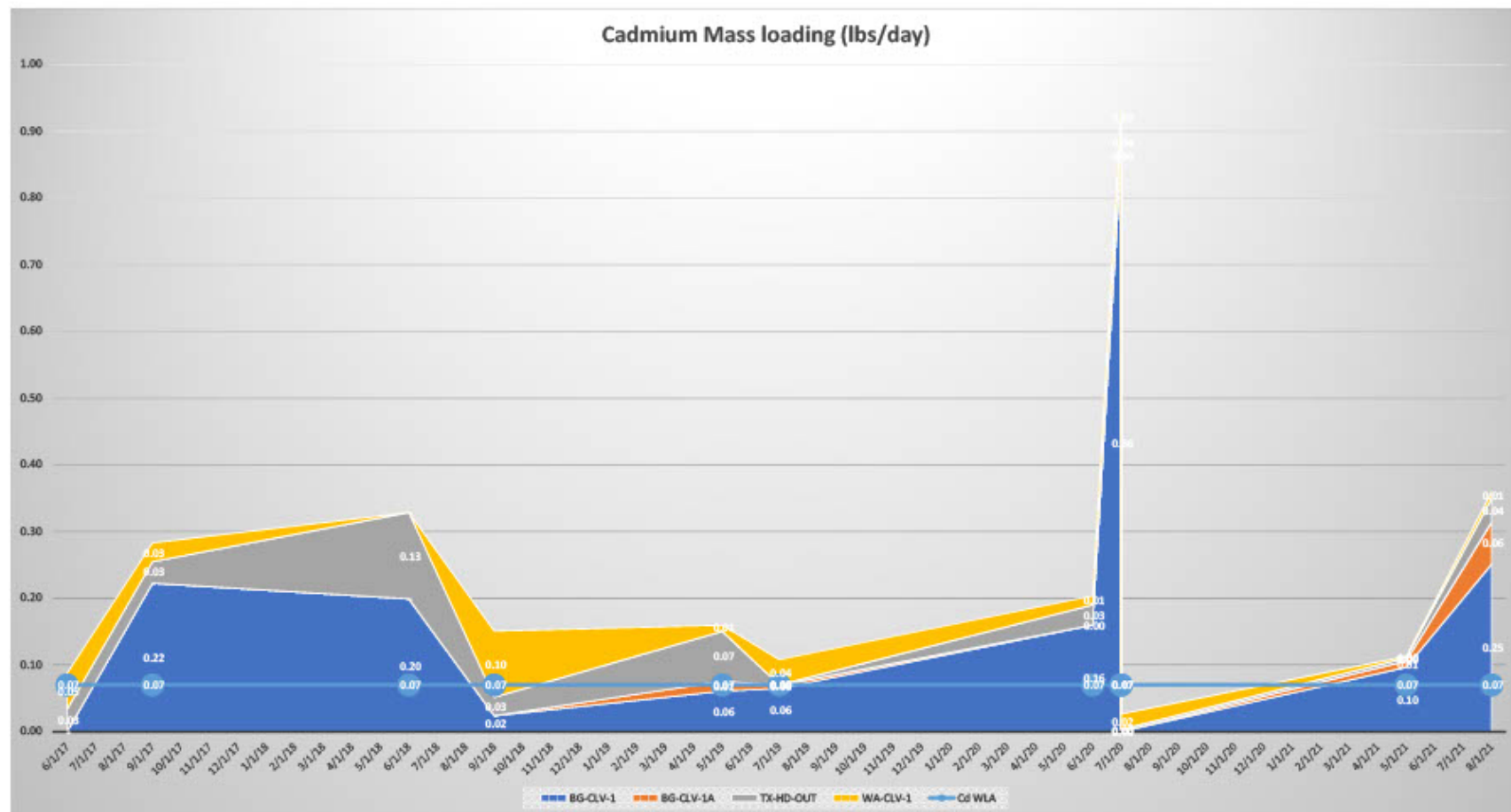
TMDL-Related Monitoring - Silver Bow Creek (Arco Sampling Results)

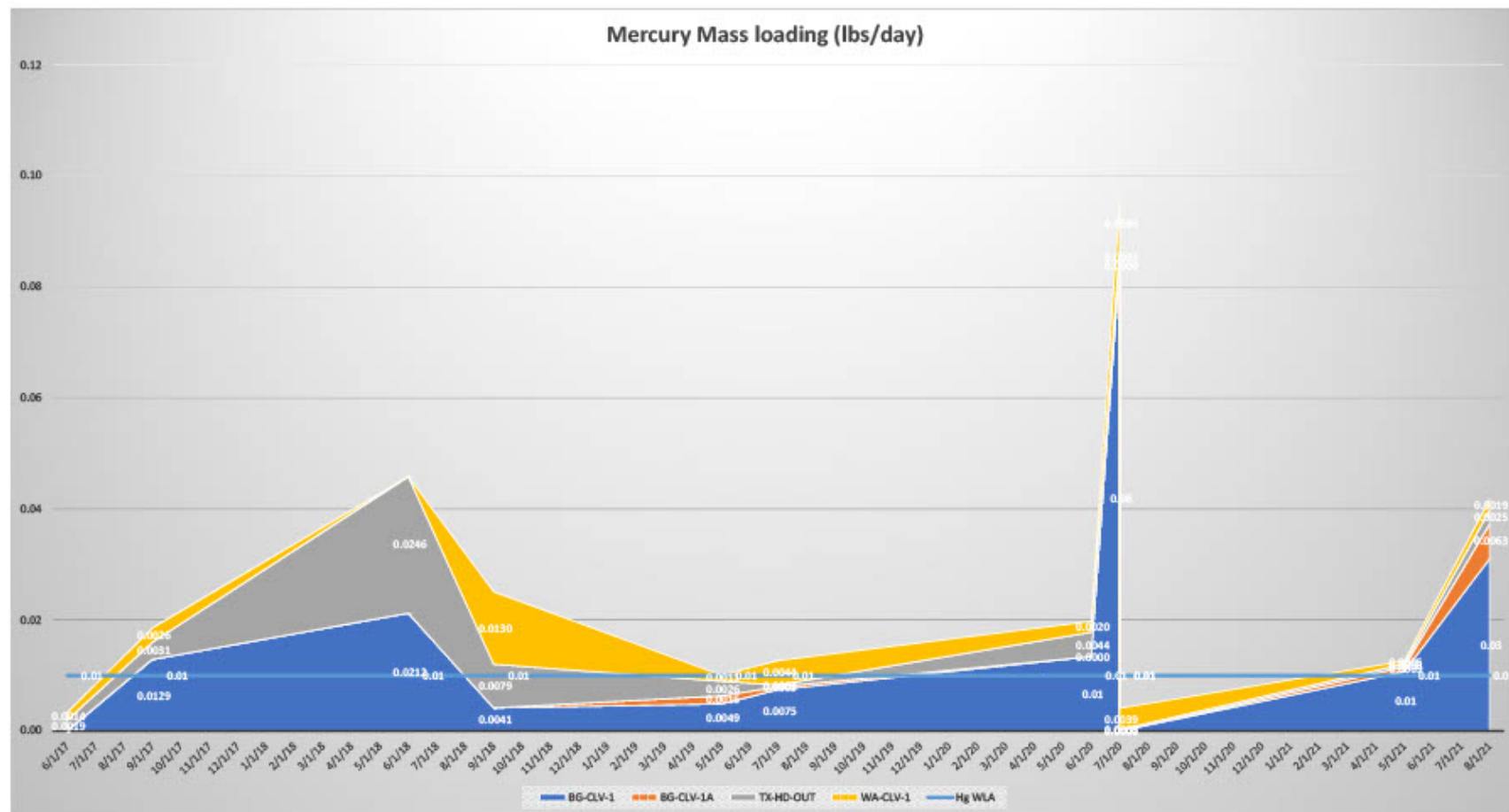
Testing Period	Sample Date	Arsenic (mg/l)	Cadmium (mg/l)	Copper (mg/L)	Mercury (mg/L)	Lead (mg/L)	Zinc (mg/L)	TSS (mg/L)
BG-CLV-1 West Buffalo Gulch								
January to July 2017	6/4/17	0.017	0.0020	0.18	0.00012	0.11	0.73	0.10
July to December 2017	9/30/17	0.041	0.0043	0.31	0.00025	0.30	1.36	2.46
January to July 2018	6/28/18	0.041	0.0037	0.29	0.00039	0.27	1.10	0.49
July to December 2018	9/20/18	0.006	0.0003	0.03	0.00005	0.02	0.12	0.02
January to July 2019	5/17/19	0.046	0.0039	0.42	0.00031	0.36	1.81	1.29
July to December 2019	7/8/19	0.046	0.0046	0.37	0.00053	0.30	1.70	0.62
January to July 2020	6/27/20	0.132	0.0104	1.16	0.00087	1.45	4.83	2.38
July to December 2020	7/10/20	0.166	0.0143	1.45	0.00139	2.09	5.80	2.91
January to July 2021	5/26/21	0.026	0.0019	0.23	0.00022	0.28	0.82	0.60
July to December 2021	8/1/21	0.033	0.0030	0.30	0.00037	0.36	1.28	0.56
BG-CLV-C1A East Buffalo Gulch								
January to July 2019	5/17/19	0.057	0.0049	0.64	0.00048	0.34	1.94	0.88
July to December 2019	7/8/19	0.037	0.0032	0.40	0.00038	0.17	1.26	0.30
January to July 2020	6/27/20	0.150	0.0078	2.54	0.00046	0.67	3.10	2.76
July to December 2020	7/10/20	0.065	0.0027	0.81	0.00040	0.21	1.01	0.98
January to July 2021	5/26/21	0.156	0.0007	0.21	0.00006	0.07	0.29	0.28
July to December 2021	8/1/21	0.033	0.0020	0.87	0.00020	0.17	0.82	0.80
TX-HD-OUT Texas Ave. (Greely area)								
January to July 2017	5/12/17	0.090	0.0038	1.52	0.00022	0.25	1.45	0.72
July to December 2017	9/14/17	0.045	0.0019	0.83	0.00019	0.12	0.67	0.58
January to July 2018	6/10/18	0.053	0.0018	0.68	0.00034	0.11	0.66	0.48
July to December 2018	8/27/18	0.022	0.0008	0.20	0.00022	0.02	0.20	0.09
January to July 2019	6/16/19	0.083	0.0054	2.30	0.00019	0.34	1.90	1.80
July to December 2019	8/10/19	0.018	0.0004	0.20	0.00015	0.02	0.19	0.13
January to July 2020	6/27/20	0.087	0.0032	1.54	0.00046	0.23	1.23	1.29
July to December 2020	7/10/20	0.052	0.0026	1.14	0.00020	0.18	0.93	0.88
January to July 2021	5/26/21	0.021	0.0006	0.35	0.00007	0.05	0.26	0.18
July to December 2021	8/1/21	0.079	0.0035	2.27	0.00025	0.30	1.26	1.72
WA-CLV-1 Warren Ave. & Anaconda Rd								
January to July 2017	4/24/17	0.116	0.0095	0.95	0.00024	0.37	1.64	0.56
July to December 2017	8/13/17	0.094	0.0060	0.99	0.00054	0.36	1.46	0.39
January to July 2018	5/4/18	0.042	0.0035	0.16	0.00012	0.03	0.34	0.00
July to December 2018	9/17/18	0.101	0.0055	0.84	0.00072	0.35	1.34	0.39
January to July 2019	5/25/19	0.109	0.0087	0.77	0.00100	0.36	1.57	0.52
July to December 2019	7/8/19	0.077	0.0062	0.78	0.00072	0.30	1.42	0.51
January to July 2020	6/27/20	0.070	0.0032	0.67	0.00083	0.22	0.98	0.34
July to December 2020	7/10/20	0.083	0.0034	0.74	0.00056	0.15	0.95	0.30
January to July 2021	5/26/21	0.014	0.0006	0.17	0.00013	0.05	0.21	0.11
July to December 2021	8/1/21	0.016	0.0010	0.14	0.00019	0.08	0.27	0.10

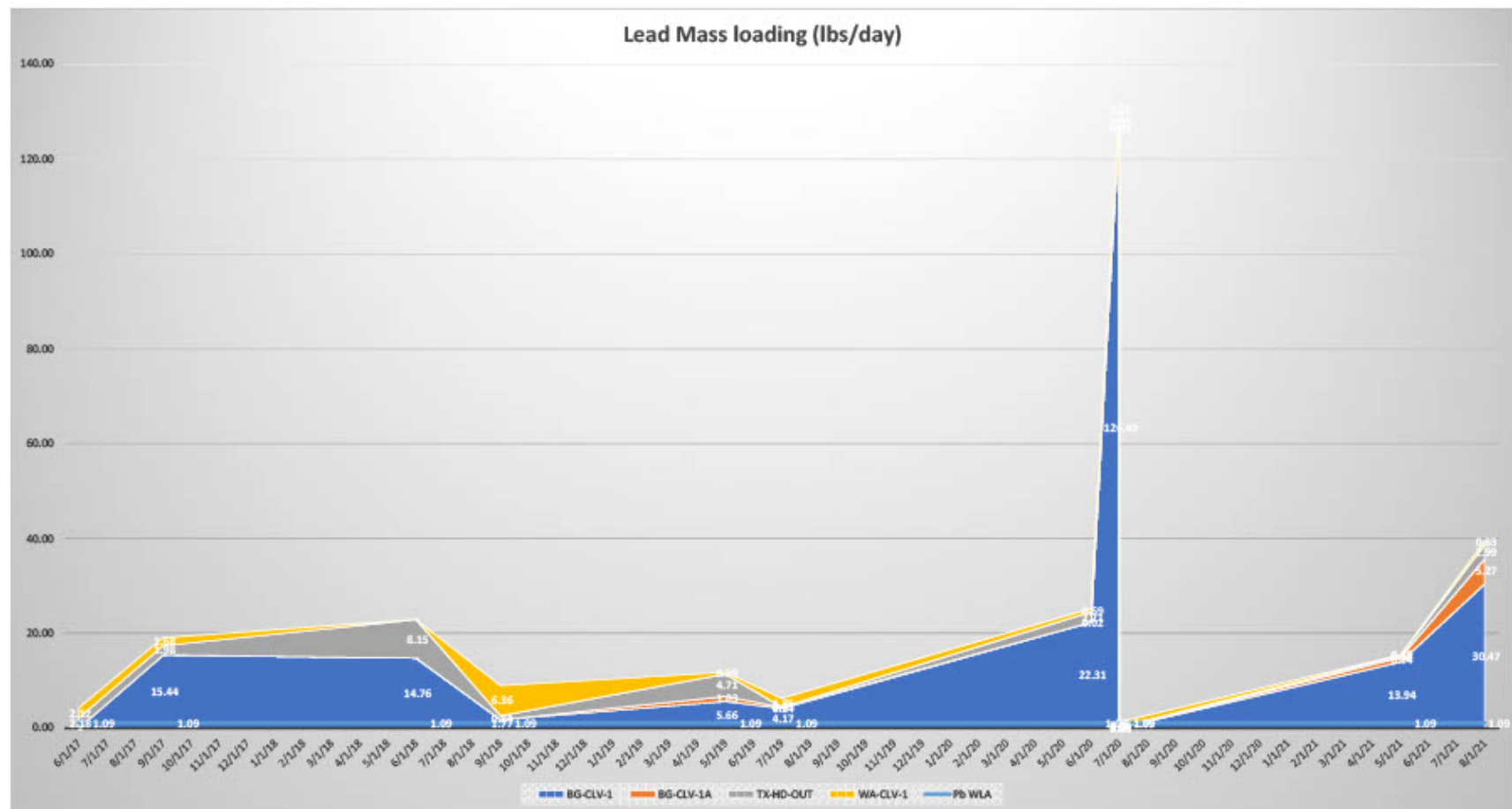
* ARCO has not released 2022 sampling data to the public. BG-CLV-C1A and WA-CLV-1 are no longer being monitored. Replaced with LC-CLV-1 and MSD-CLV-3A, respectively, for 2020 and 2021.

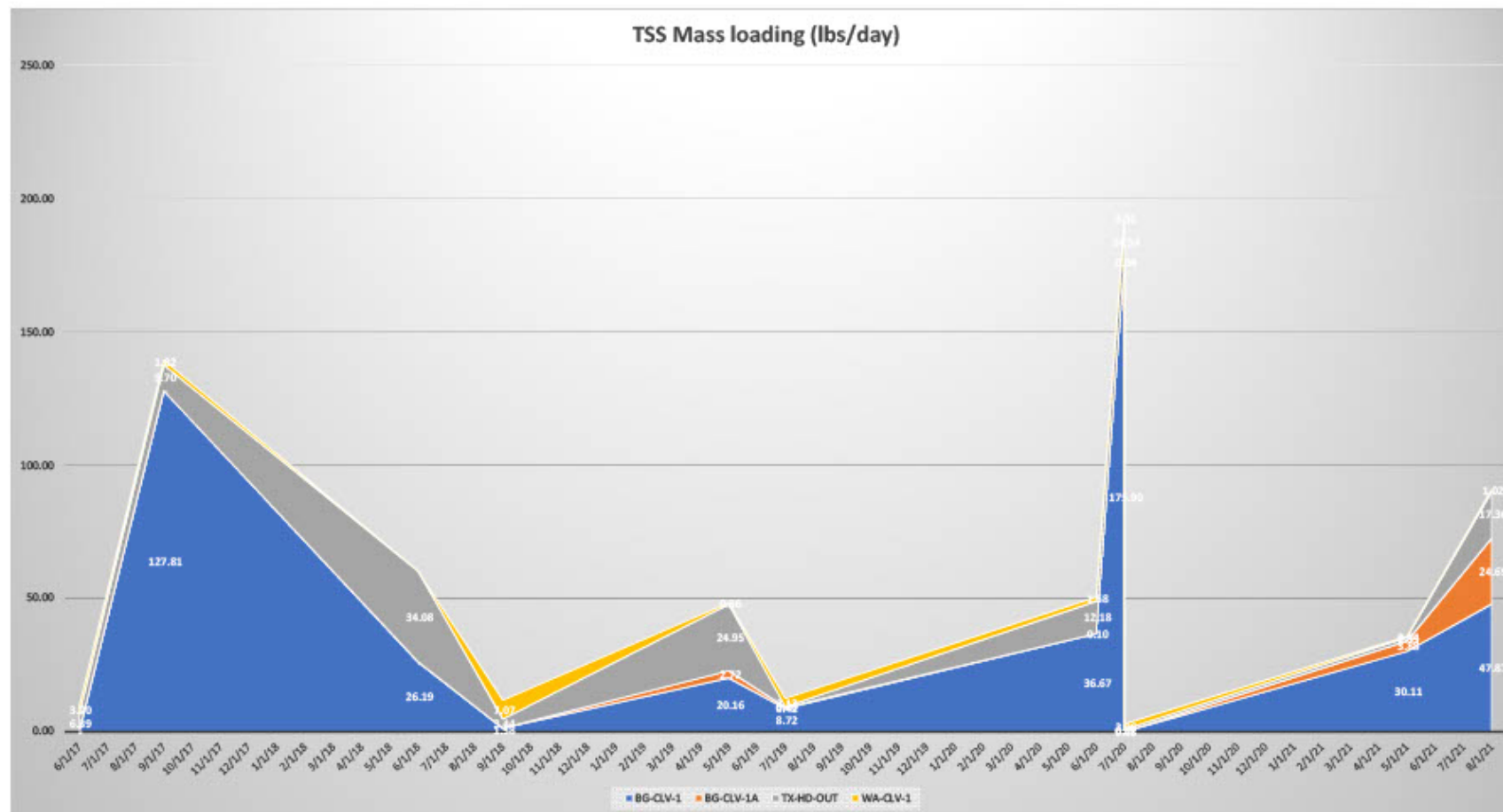
Arsenic Mass loading (lbs/day)

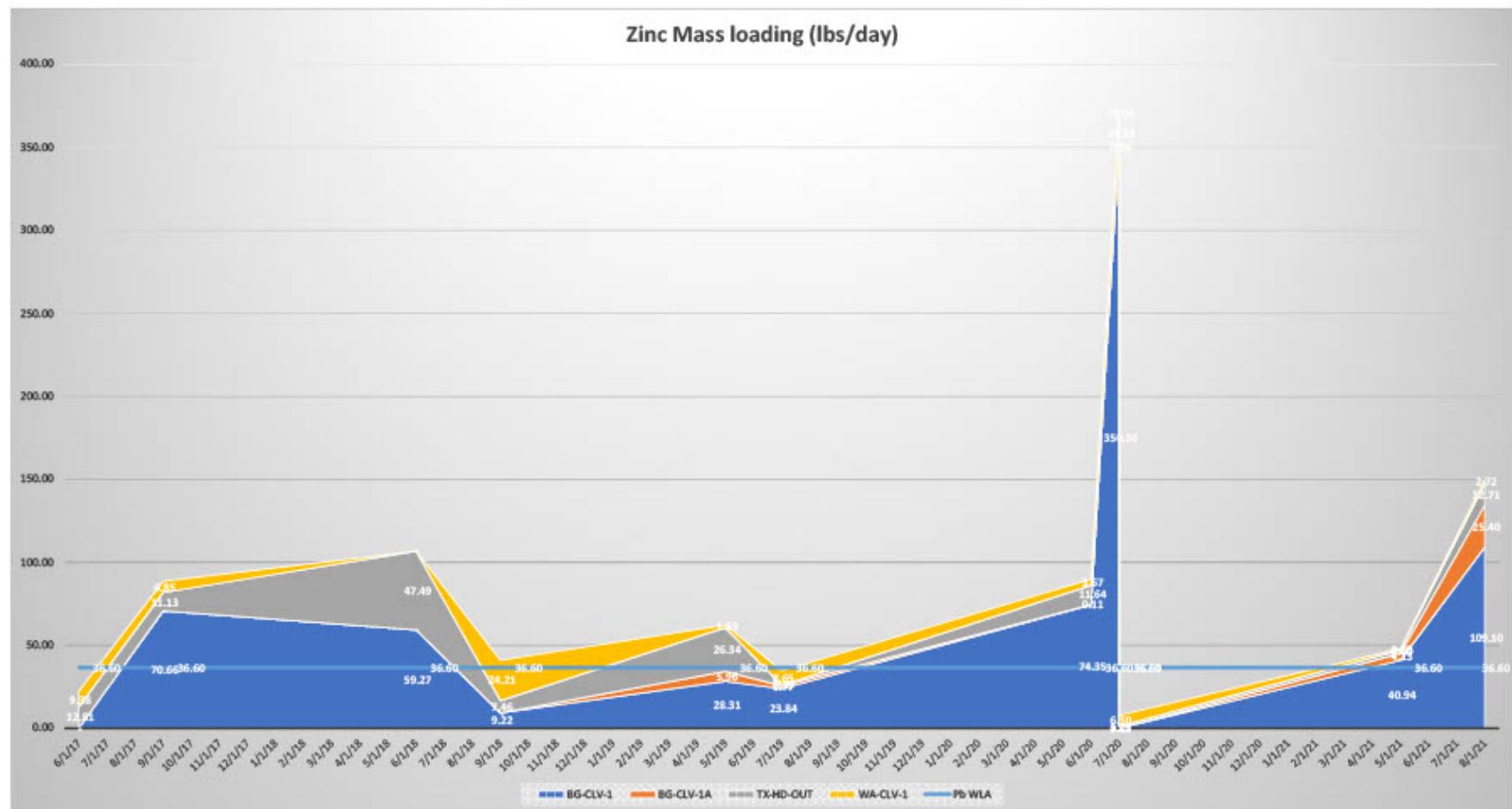












All Outfalls

Major = 36" or Larger
Minor = Less than 36"



Outfall Name	Receiving H2O	Diameter	Major/Minor	Inspected 2018	Inspected 2019	Inspected 2020	Inspected 2021	Inspected 2022	Misc.
Anaconda Road/Butte Brewery									
AB-0-1	Metro Storm/ Historic Silver Bow Creek	open channel	Minor			x			
AB-0-2	Metro Storm/ Historic Silver Bow Creek	48"	Major			x			
AB-0-3	Metro Storm/ Historic Silver Bow Creek	10"	Minor					x	find culvert inlet
AB-0-4	Metro Storm/ Historic Silver Bow Creek	12"	Minor			x			
Basin Creek									
BC-0-1	Basin Creek	5"	Major			x	x		
BC-0-2	Basin Creek	4"	Major			x	x		
Blacktail Creek									
BT-0-1	Blacktail Creek	2"	Minor		x			x	on golf course
BT-0-2	Blacktail Creek	36"	Major		x		x		on golf course
BT-0-3	Metro Storm	24"	Minor		x			x	
BT-0-4	Blacktail Creek	12"	Minor		x			x	
BT-0-5	Blacktail Creek	12"	Minor		x			x	now BT-0-31
BT-0-7	Blacktail Creek	36"	Major		x		x		
BT-0-8	Blacktail Creek	42"	Major		x		x	x	#1 by motel High Priority
BT-0-11	Blacktail Creek	24"	Minor		x				
BT-0-12	Blacktail Creek	16"	Minor		x				
BT-0-13	Blacktail Creek	8"	Minor		x				
BT-0-14 - EAST	Blacktail Creek	10"	Minor					x	
BT-0-14 - WEST	Blacktail Creek	10"	Minor		x				
BT-0-15	Blacktail Creek	15"	Major		x		x		walking trail drain pond area
BT-0-16	Blacktail Creek	144"	Major		x		x		Huge Culvert under I-15 walking trail high priority drain pond area
BT-0-17	Blacktail Creek	18"	Minor	x	x			x	
BT-0-18	Blacktail Creek	6" (iron)	Minor		x			x	#2 by motel
BT-0-19	Blacktail Creek	6" (PVC)	Minor		x			x	#3 by motel
BT-0-20	Blacktail Creek	6" (PVC)	Minor		x			x	#4 by motel
BT-0-21	Blacktail Creek	6" (PVC)	Minor		x			x	#5 by motel
BT-0-22	Blacktail Creek	6" (PVC)	Minor		x				unlocatable
BT-0-23	Blacktail Creek	6" (PVC)	Minor		x			x	#7 by motel
BT-0-24	Blacktail Creek	18"	Major		x		x	x	
BT-0-25	Blacktail Creek	14"	Minor		x				
BT-0-26	Blacktail Creek	2"	Minor	x	x			x	on golf course High Priority
BT-0-27	Blacktail Creek	12"	Minor		x				on golf course
BT-0-28	Blacktail Creek	6"	Minor		x				#8 by motel
BT-0-29	Blacktail Creek	36"	Major		x		x		MDT
BT-0-30	Blacktail Creek	12"	Minor		x			x	new 2013
BT-0-31	Blacktail Creek	24"	Minor		x			x	formerly BT-0-5
BT-0-32	Blacktail Creek	12"	Minor	x	x			x	new 2018 high priority
BT-0-33	Blacktail Creek	2'?	Minor			x		x	MDT Formerly SC-0-5
BT-0-34	Blacktail Creek	NA	?					x	MDT Formerly SC-0-6
Buffalo Gulch									
BG-0-1	Metro Storm/ Historic Silver Bow Creek	48"	Major				x	x	HDD upgradient
BG-0-2	Metro Storm/ Historic Silver Bow Creek	24"	Minor					x	
BG-0-3	Metro Storm/ Historic Silver Bow Creek	36"						x	
Grove Gulch									
GG-0-1	Blacktail Creek?	3', 4'	Major			x	x		
GG-0-2	Blacktail Creek	4"	Major			x			
GG-0-3	Blacktail Creek	12"	Minor			x			
GG-0-4	Silver Bow Creek	18-24"	Minor			x			
Idaho Street									
IS-0-1	Silver Bow Creek		Major			x	x		HDD
Missoula Gulch									
MG-0-2	re-routed	re-routed	re-routed	re-routed				x	
MG-0-3	Silver Bow Creek	18"				x			

All Outfalls

Major = 36" or Larger
Minor = Less than 36"



Outfall Name	Receiving H2O	Diameter	Major/Minor	Inspected 2018	Inspected 2019	Inspected 2020	Inspected 2021	Inspected 2022	Misc.
Montana Street									
MT-0-1	Silver Bow Creek	NA	Major			x	x		Private and owner's Black cat
MT-0-2	Silver Bow Creek	18"	Minor			x			
MT-0-3	Silver Bow Creek	18"	Minor			x			
MT-0-4	Silver Bow Creek	30"	Minor			x			
Sand Creek									
SC-0-4	Basin Creek	3', 4'	Major			x	x		MDT
SC-0-7	on	private	property	private				x	
Silver Bow Creek									
SB-0-2	Metro Storm/ Historic Silver Bow	20"	Minor			x			
SB-0-3	Metro Storm/ Historic Silver Bow Creek	30"	Minor			x			
SB-0-4	Metro Storm/ Historic Silver Bow	12"	Minor			x			
Montana Resources									
MR-0-1	Metro Storm/ Historic Silver Bow	3 @ 4'10"	Major				x		on mine (MRI) property
Warren Avenue									
WA-0-1	Metro Storm/ Historic Silver Bow	20"	Minor	x					
WA-0-2	Metro Storm/ Historic Silver Bow	12"	Major	x			x		
WA-0-3	Metro Storm/ Historic Silver Bow	12"	Minor	x					
WA-0-4	Metro Storm/ Historic Silver Bow	12"	Minor	x					
WA-0-5	Metro Storm/ Historic Silver Bow	12"	Minor	x					
WA-0-6 nested with 07	Metro Storm/ Historic Silver Bow	12"	Minor	x					
WA-0-7 nested with 06	Metro Storm/ Historic Silver Bow	24"	Minor	x					
WA-0-8	Metro Storm/ Historic Silver Bow	4"	Major	x			x		
WA-0-9	Metro Storm/ Historic Silver Bow	open channel	major	x			x		
WA-0-10	Metro Storm/ Historic Silver Bow	12"	Minor	x					
WA-0-11	Metro Storm/ Historic Silver Bow Creek	12"	Minor	x					
WA-0-12	Metro Storm/ Historic Silver Bow Creek	12"	Minor	x					
West Side									
WS-0-1	Silver Bow Creek	48"	Major			x	x		
WS-0-2	Silver Bow Creek	24"	Minor	x					
WS-0-3	Silver Bow Creek	10"	Minor	x					
WS-0-4	Silver Bow Creek	NA	Minor					x	
WS-0-6	Silver Bow Creek	12"	Minor	x					MDT
WS-0-7	Silver Bow Creek	70"	Major			x	x		

SUBTOTAL MAJOR 22
SUBTOTAL MINOR 49
SUBTOTAL Unknown 1
TOTAL 72

0% 0% 0% 0% 26
36%

Total Inspected 26

Appendix O
Sampling & Analysis Plan



July, 2022

BUTTE-SILVER BOW MS4 STORMWATER SAMPLING AND ANALYSIS PLAN



The City and County of
Butte-Silver Bow Montana

Prepared for:
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Butte, MT 59701

Butte-Silver Bow Public Works
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Butte, MT 59701



Submitted by:
Water & Environmental Technologies
480 East Park Street
Butte, MT 59701
406 782 5220

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1 INTRODUCTION

1.1 BACKGROUND

Butte-Silver Bow (BSB) operates its storm drainage system under the authorization of the Montana Pollution Discharge Elimination System (MPDES) General Permit for Storm Water Discharges Associated with Small Municipal Separate Storm Sewer Systems (MS4s), hereafter referred to as the MS4 General Permit. The current MS4 General Permit, issued by the Montana Department of Environmental Quality (MDEQ), is effective from January 1, 2017 through December 31, 2021.

In accordance with Part III of the MS4 General Permit, BSB is required to develop a sampling plan for Total Maximum Daily Load (TMDL) related monitoring. The results from the TMDL-related monitoring will be used in conjunction with the TMDL section of the SWMP to address applicable TMDLs. Additionally, Part IV of the MS4 General Permit requires semi-annual monitoring (self-monitoring) to determine effectiveness of control measures and activities identified in the SWMP.

1.2 PURPOSE

The purpose of this sampling plan is to describe BSB's TMDL and self-monitoring programs for the 2020 through 2021 permit term. ***This monitoring plan updates and supersedes the sampling plan submitted with the 2017 annual report.*** More specific details relating to the purpose of this plan are as follows:

- BSB has selected Part III TMDL-related monitoring Option 1; therefore, this plan will be implemented to sample and track the pollutant(s) listed as a source of impairment specific to the receiving water body.
- BSB has selected Part IV self-monitoring Option 1 (see Part IV of the MS4 General Permit). The monitoring locations identified in this plan will be used to fulfill the self-monitoring requirements.
- This document, when implemented, will fulfill the requirements of Part III.B of the MS4 General Permit, requiring a sampling plan for TMDL-Related Monitoring.

2 BSB MS4-RELATED TMDLS

2.1 TMDL OVERVIEW

There are 5 named or perennial surface waters that receive stormwater discharges from BSB's MS4 outfalls. These receiving waters are as follows:

- Basin Creek
- Blacktail Creek

- Silver Bow Creek
- Sand Creek
- Grove Gulch Creek

Basin Creek, Blacktail Creek and Sand Creek are classified as non-impaired surface waters of the state. Silver Bow Creek (SBC) is classified as impaired from the confluence of Silver Bow Creek and Blacktail Creek and has an approved pollutant TMDL with waste load allocation (WLA). Table 1 summarizes the impaired waterbodies with TMDLs within the BSB MS4 boundary and the associated pollutant of impairment. Figures 1 through 3l provide maps of BSB's outfalls and associated receiving waterbodies.

Table 1. Summary of TMDLs with BSB MS4 Approved WLAs

Waterbody	Pollutants of Impairment			
	Total Phosphorus	Total Nitrogen ¹	Metals (As, Cd, Cu, Pb, Hg, Zn)	Sediment (TSS)
Silver Bow Creek	X	X	X	X

¹ TN is a surrogate TMDL for Nitrate+Nitrite

2.2 TMDL STRATEGY

Part III.B of the MS4 General Permit specifies that BSB shall develop and implement a section of their SWMP to address TMDLs. More specifically, BSB must include in its SWMP a section identifying the measures and BMPs it plans to implement, describing BSB's impairment priorities and long term strategy, and outlining interim milestones (i.e., a completion schedule for action items) for controlling the discharge of the pollutants of concern and making progress towards meeting the TMDL. BSB is in a unique situation in that 100% of the outfalls into SBC originate from drainage basins within the Butte Priority Soils Operable Unit (BPSOU) Superfund site. The responsible party (Atlantic Richfield-AR) works closely with BSB and has invested heavily in stormwater controls and BMPs. The Superfund Storm Water System within the Butte Priority Soils Operable Unit – Operation and Maintenance Plan is in Appendix A. This document details all the stormwater features, including catch basins, ditches, conveyances, and hydrodynamic separators. Furthermore, the Silver Bow Creek/Butte Area One Consent Decree has been recently released. Although not yet approved, this Consent Decree outlines the negotiated cleanup activities, including significant future stormwater system improvements. The documents can be found at:

<https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.scs&id=0800416&doc=Y&colid=39487®ion=08&type=SC>

Multiple outfalls into SBC have been monitored for several years by AR and will continue to be monitored for the foreseeable future. BSB has selected its monitoring locations for the Part III TMDL sampling at outfalls discharging into SBC. These locations include one within the listed portion of SBC, below the confluence of SBC and Blacktail Creek and three upstream of the confluence in the recently renamed SBC (formerly Metro Storm Drain). The section of SBC above the confluence with Blacktail Creek is not currently listed; however, additional stormwater outfall locations that are both within the listed reach of SBC and the identified urban area are not available. BSB anticipates that this section would be added to the impaired stream list..

3 MONITORING METHODOLOGY, LOCATIONS AND STRATEGY

3.1 FIELD SAMPLING METHODS

TMDL monitoring as required by Part III takes place within the BPSOU and is the responsibility of AR. Monitoring may be either manual or automatic depending on the site but is primarily automated. Self-monitoring as required by the Part IV monitoring requirements will be collected by BSB or an assigned contractor. Monitoring may be either manual or automatic depending on the site but is primarily manual.

3.1.1 MANUAL SAMPLE COLLECTION

Manual grab techniques may be used to collect samples. The grab sample method is suitable because samples will be collected within minutes of each other and the stormwater hydraulic residence time in the system is limited. The samples will be collected by field personnel during rainfall events.

Rainfall events will be observed by monitoring the radar on weather stations and websites, so personnel can determine when to be present during active events to obtain manual samples. Samples will be collected in clean, labeled bottles provided by the laboratory. If necessary, an extension pole, rope or other apparatus can be used to aid the field crew in safe sample collection, especially during high flow conditions.

3.1.2 AUTOMATED SAMPLE COLLECTION

Automated sampling devices are currently employed at all the chosen TMDL monitoring sites and will be used to collect flow proportional composite samples; which are, small constant volume samples that are collected throughout a runoff event (as opposed to a manual grab sample, which only represents one point in time during an event). Flow-weighted sampling is used by collecting multiple aliquots (small samples) over the duration of the storm in one bottle which will be shipped to the laboratory for analysis following the storm event.

3.1.3 SAMPLING EQUIPMENT DECONTAMINATION

Sampling equipment will be decontaminated between sampling locations and sampling events.

3.2 TMDL RELATED MONITORING: BMP PERFORMANCE ASSESSMENT

A summary of all TMDL-related monitoring locations is provided in Table 2. This sampling will be consistent with Part III.B Option 1 of the permit.

Table 2. TMDL-Related Monitoring Sample Locations

Name	Watershed	Receiving Waterbody	Location	Sample Collection Method	Number of Samples (Annually)	Sample Parameter(s) (MS4 Listed Impairments)
BG-CLV-1	W. Buffalo Gulch	Silver Bow Creek	45°59'47.3"N 112°32'12.9"W	Automatic	Semi- annual ¹	TP, TN, Metals, Sediment
MSD-CLV-3A	George St	Silver Bow Creek	45°59'43.15"N 112°31'48"W	Automatic	Semi- annual ¹	TP, TN, Metals, Sediment
TX-HD-OUT	Texas Ave. (Greely)	Silver Bow Creek	46°00'08.9"N 112°30'45.3"W	Automatic	Semi- annual ¹	TP, TN, Metals, Sediment
LC-CLV-1	Warren Ave & Locust St	Silver Bow Creek	46°01'0.8034"N 112°31'48"W	Automatic	Semi- annual ¹	TP, TN, Metals, Sediment

¹ One sample must be collected between January 1st and June 30th of each permitted calendar year and the other sample between July 1st and December 31st.

Sampling location BG-CLV-1 is located at the outfall of the West Buffalo Gulch drainage after passing through a Hydrodynamic Device, draining into SBC downgradient from the SBC-Blacktail Creek confluence. The West Buffalo Gulch drainage is approximately 600 acres of mixed commercial/industrial and residential land use.

Sampling location MSD-CLV-3A is at the culvert of the MSD in the George Street drainage draining into SBC at the SBC-Blacktail Creek confluence. The Georg Street drainage is approximately 75 acres of mixed commercial/industrial and residential land use.

Sampling location TX-HD-Out is at the outlet of the Hydrodynamic Device located at the intersection of Texas Ave and Silver Bow Blvd, draining to Silver Bow Creek, upgradient from the SBC-Blacktail Creek confluence. The area captures storm water from the Greeley neighborhood and covers approximately 520 acres of primarily residential with a small portion of commercial land use.

Sampling Location LC-CLV-1 is the outlet of the Hydrodynamic Device located near Civic Center Road, below TX-HD-Out, draining into SBC upgradient from the SBC-Blacktail Creek confluence. The area captures stormwater from the east side of uptown Butte and covers approximately 175 acres of residential, commercial and industrial land use.

3.3 SELF MONITORING

BSB MS4 drainage area associated with site 002 drains to Blacktail Creek, which is a non-listed stream. BSB intends to follow guidelines listed in Part IV Monitoring Option 1 and sample Outfalls which represent two commercial and two residential areas and discharge into Blacktail Creek. Blacktail Creek is largely located outside of the BPSOU boundary; as a result, storm water quality better represents BSB's true municipal impact to surface water.

Extensive sampling is conducted on Silver Bow Creek and the water quality conditions are adequately documented through the sampling required within the Superfund program. These activities far exceed MS4 requirements. Superfund deliverable schedules do not match with MS4 annual report requirements. Significant remedy work is ongoing and additional work is planned. Both of these factors will make identification of trends linked to MS4 activities difficult, if not impossible. BSB has chosen to focus its MS4 monitoring efforts related to Part IV requirements in areas of Butte that are outside the Superfund area.

BSB MS4 drainage area associated with site 001A drains to Blacktail Creek, which is not listed as impaired. 001A is collected from the final manhole/inlet prior to final discharge at BT-O-11. The drainage area associated with 001A is approximately 156 acres, comprised mostly of commercial/industrial land use along Harrison Avenue.

BSB MS4 drainage area associated with site 001B drains to the Blacktail Creek/SBC at the confluence of the streams. Site 001B is collected at the end of the discharge pipe, prior to a settling/catch basin at BG-O-1. The drainage area associated with site 001B is approximately 600 acres, comprised of a mix of residential and commercial/industrial land use within Buffalo Gulch drainage in uptown Butte. The drainage associated with site 001B contains a Hydrodynamic Device prior to the discharge location. BSB is evaluating the need to implement future BMPs within these drainage areas to further reduce the MS4's discharge of pollutants to Blacktail Creek. The monitoring results from baseline samples collected within the drainage area will establish the existing conditions. Monitoring results will be compared to the baseline data if BMP(s) are added within the drainage basin.

BSB MS4 drainage area associated with 002A is located at the outfall BT-O-05 and collects from approximately 65 acres, most of which is purely residential land use. The 2nd drainage area associated with this monitoring requirement is Monitoring location 002B which is located at the outfall BT-O-08. The drainage area is approximately 615 acres, comprised mostly of residential land use and approximately 3% of that area is comprised of commercial land use. The monitoring results from baseline samples collected within the drainage area will establish the existing conditions. Monitoring results will be compared to the baseline data if BMP(s) are added within the drainage basin. Site 002B is a new sampling location, previously the samples were taken from the manhole just upgradient to the commercial inlets in the area. DEQ has advised BSB that samples need to be collected as close to the outfall as possible.

Table 3 below shows the Self-Monitoring locations associated with the Part IV monitoring requirements.

Table 3. Self-Monitoring Sample Locations

Name	Watershed	Receiving Waterbody	Location	Sample Collection Method	Frequency	Sample Parameter(s)
BT-O-11 001A	Blacktail Creek	Blacktail Creek	45° 59' 7.152" N 112° 30' 30.2852" W	Grab	Semi-annual ¹	▪ Total Suspended Solids ▪ Chemical Oxygen Demand ▪ Total Phosphorus ▪ Total Nitrogen ▪ pH ▪ Copper ▪ Lead ▪ Zinc ▪ Estimated Flow ▪ Oil and Grease
BG-O-1 001B	West Buffalo Gulch	Blacktail Creek/Silver Bow Creek	45° 59' 47.2992" N 112° 32' 12.858" W	Grab	Semi-annual ¹	
BT-O-05 002A	Blacktail Creek	Blacktail Creek	45° 59' 7.1268" N 112° 30' 26.2944" W	Grab	Semi-annual ¹	
BT-O-8 002B	Blacktail Creek	Blacktail Creek	45° 59' 22.182" N 112° 31' 1.3296" W	Grab	Semi-annual ¹	

¹ One sample must be collected between January 1st and June 30th of each permitted calendar year and the other sample must be collected between July 1st and December 31st of each calendar year.

4 MONITORING REQUIREMENTS

Quality Assurance/Quality Control (QA/QC) is critical for accurate sampling. This section provides details of sampling methods, laboratory analytical methods, and QA/QC procedures to be used in sampling.

4.1 SAMPLING PARAMETERS AND ANALYTICAL METHODS

The water quality samples collected will be analyzed for the MS4 listed pollutants of impairment in the specific receiving waterbody as per Part III of the permit as well as the parameters listed in Table 1 of Part IV.A in the MS4 General Permit (Small MS4 Monitoring Requirements). Table 4 shows the parameters and standard analytical methods to be used.

Table 4. Analytical Methods

Self-Sampling Parameter	Analytical Method	Reporting Limit (mg/L)
Total Suspended Solids	SM 2540 D	1
Total Phosphorus	E365.1	0.01
Nitrogen – Kjeldahl, total ¹	E351.2	0.2
Nitrate & Nitrite, total ¹	E353.2 E300A	0.01
Chemical Oxygen Demand	E410.1 E410.4	1
Total Recoverable Copper	E200.8	0.01
Total Recoverable Lead	E200.8	0.001
Total Recoverable Zinc	E200.7 E200.8	0.01
Total Recoverable Arsenic ²	E200.7	0.01
Total Recoverable Cadmium ²	E200.7	0.005
Total Recoverable Lead ²	E200.7	0.015
Total Recoverable Mercury ²	E200.7	0.002
Oil and Grease	E1664A	1
Estimated Flow	N/A	N/A
pH	E150.1	0.1 unit
TMDL Parameter	Analytical Method	Reporting Limit (mg/L)
Total Recoverable Copper	E200.8	0.01
Total Recoverable Lead	E200.8	0.001
Total Recoverable Zinc	E200.7 E200.8	0.01

Total Recoverable Arsenic ²	E200.7	0.01
Total Recoverable Cadmium ²	E200.7	0.005
Total Recoverable Lead ²	E200.7	0.015
Total Recoverable Mercury ²	E200.7	0.002
Total Suspended Solids	SM 2540 D	1

¹ Total Nitrogen is calculated from Nitrogen – Kjeldahl, total and Nitrate & Nitrite, total.

² TMDL only Monitoring parameters, Total Nitrogen and Total Phosphorus sampling are not required for TMDL monitoring as the Waste Load Allocation is only for times when the storm water system is not activated.

All data should meet the precision, recovery, and accuracy requirements specified in the laboratory method used. The laboratory used for this study will maintain internal quality assurance/quality control procedures as documented in their laboratory quality assurance manual. The laboratory will use a combination of blanks, laboratory control spikes, surrogates, and duplicates to evaluate the analytical results.

4.2 SAMPLING HANDLING AND DOCUMENTATION

Automatic samplers will be serviced immediately following a storm event. Chain of custody forms will accompany all samples. A Field Log will be kept for each sampling site with the details of the date, time, personnel, and purpose of visit, weather, and conditions observed, samples collected, and actions performed.

4.3 STORM EVENTS AND SAMPLE FREQUENCY

Sampling will be attempted for measurable runoff events (that is a rainfall events that produce any volume of runoff flowing past/through the monitoring location that will allow a sample to be collected). In accordance with Part IV.a.6.a. of the MS4 General Permit, a minimum of one sample will be collected at each site between January 1st and June 30th and a minimum of one sample will be collected at each site between July 1st and December 31st of each year.

Precipitation will be monitored using web-based rain gauges, and the radar managed by the National Oceanic and Atmospheric Administration's Nation Weather Service. This data may be used to delineate storm characteristics, if necessary (timing, duration, intensity, and relative total rainfall).

4.4 QUALITY ASSURANCE/QUALITY CONTROL

Samples will be analyzed using the designated EPA Method or Standard Method as defined in Table 4. Chain-of-custody procedures will be followed for samples sent to the laboratory.

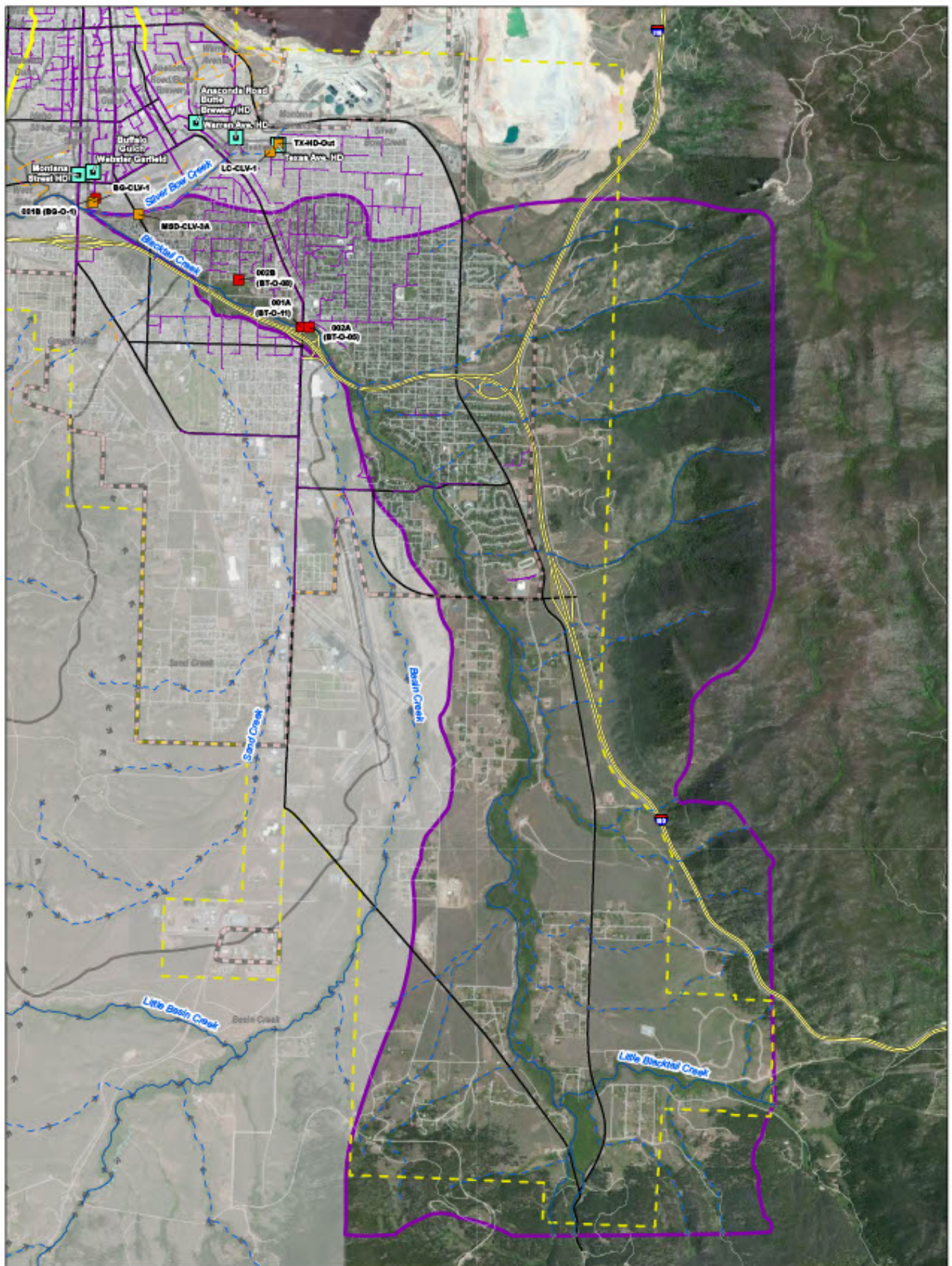
4.5 ANALYSIS OF RESULTS

All sample results will be compiled into a spreadsheet containing the results for each parameter at every sample site.

5 REPORTING

The results from monitoring will be presented and discussed in each year's MS4 annual report. The discussion will focus on the evaluation of the effectiveness of BMPs being implemented to address pollutants of impairment within each local watershed as well as changes in water quality over time.

Figures



Legend	
■ HDD	--- Ditch
■ Outfalls	--- Sewer District Boundary (MS4 Boundary)
■ TMDL	--- Canal Ditch
■ GRAB	--- Perennial Stream
--- Spiral Wound PVC	--- Intermittent Stream
--- Primary Pipe	--- Urban Limit Boundary
--- Secondary Pipe	--- Drainage Basin



City of Butte
MS4 Boundary - USGS

Job#: BSEPMM41 T5

Date: 7/11/2022

FIGURE 3

The Office for Sustainable Growth, Planning, and Development, Jackson, Idaho State

Appendix A

(OPERATION AND MAINTENANCE PLAN

FOR THE BUTTE-SILVER BOW

SUPERFUND STORM WATER SYSTEM

WITHIN THE BUTTE PRIORITY SOILS OPERABLE UNIT)

INTERIM
OPERATION AND MAINTENANCE PLAN
FOR THE BUTTE-SILVER BOW
SUPERFUND STORM WATER SYSTEM
WITHIN THE BUTTE PRIORITY SOILS OPERABLE UNIT



PREPARED FOR:
US Environmental Protection Agency, Region 8
Butte Office
400 North Main Street, Room 339
Butte, MT 59701

AUGUST 2016

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1.0 Introduction

Storm sewer systems have many components that require proper operation & maintenance (O&M) to ensure the components function as designed. These components can consist of landscaping, ditches, curb and gutter, inlets, manholes, conveyance pipes, detention/retention ponds, and any other structure that collects, conveys, or controls the flow of storm water. These structures are required to convey storm water away from infrastructure to prevent or minimize flooding. Proper maintenance of these structures will help to ensure that:

- Storm sewer systems operate as they were designed;
- Pollution sources are removed, or minimized, prior to runoff entering the storm sewer system;
- Pollutants that accumulate within the storm sewer system are removed to minimize the impact on downstream infrastructure and surface waters;
- Intended infrastructure function is maintained or restored;
- Vegetation removal is avoided or minimized where required; and
- Flooding is prevented or reduced to protect private and public facilities.

The components of a storm water system must be inspected on a regular basis to determine maintenance requirements to ensure proper operation. The inspection frequency depends on many factors including the function of the structure (conveyance vs. sediment capture), weather (dry vs. wet years), and manpower requirements, and can be varied to accommodate infrastructure type or specific locations with greater maintenance requirements. The minimum frequencies and requirements provided in this document must be maintained to detect such issues as deterioration, structural problems, sediment accumulation, and overgrown vegetation.

This plan pertains to the following components of the storm water system within BPSOU:

1. Specific Superfund Storm Water Structures (SSWS) as shown in Figure 1.
2. Storm water infrastructure on reclaimed mine sites operated under the Butte Reclamation and Evaluation System (BRES). For the purposes of this plan, storm water infrastructure is classified as engineered controls as defined in this document. BRES sites with storm water infrastructure are shown in Figure 4.
3. Portions of the BSB municipal storm water system that are within the boundary of the Butte Priority Soils Operable Unit (BPSOU) or directly related to the performance of a Superfund structure or remedy project. The BSB municipal Storm Water System is shown in Figure 2.

Municipal storm water infrastructure not specifically listed in this document and located outside of the BPSOU is not classified as a SSWS; these structures will be maintained separately according to regular Butte-Silver Bow maintenance procedures. This plan addresses the thirty-one (31) structures identified in the BSB-ARCO allocation agreement, as well as additional future structures that may be required

under remedy. A current list of the SSWS is provided in Appendix A. There are ninety (90) BRES sites with storm water features; the current list is provided in Appendix B. The municipal storm water system within the Butte Priority Soils Operable Unit (BPSOU) is maintained each year according to BSB municipal schedules; however, some components of the municipal system that are directly related to the SSWS or BRES sites identified in this plan may be inspected more frequently. The BSB municipal Storm Water System within BPSOU is shown in Figure 2. Inspection and maintenance of SSWS and identified municipal infrastructure components will be performed by BSB Superfund Division or BSB Public Works Department crews, with coordination from other departments as detailed in Section 1.6. The funding mechanism will be through BSB Public Works department budget and funds from the BSB-ARCO allocation agreement.

1.1 Data Management & Documentation

Documentation of all activities described in this O&M plan is required to ensure regulatory compliance and efficient execution. Documentation is also required to ensure that proper health and safety procedures are followed, and to identify new hazards that may develop.

Identification of structures and sites within the BSB storm water system will be dictated by the following databases: 1) the List of Superfund Storm Water Structures in Appendix A and shown in Figure 1, 2) the List of BRES sites with storm water infrastructure in Appendix B and shown in Figure 2, and 3) the BSB storm water infrastructure inventory covering inlets, conveyance pipes & ditches, detention ponds, etc., shown in Figure 2. The maps included in this manual use the standardized GIS site identification system to label all storm water infrastructure. This identification system must be followed when completing any documentation of inspection or maintenance activities. If questions arise regarding the identification and/or location of a site or structure, contact the BSB GIS, Public Works or Superfund Department for assistance. A GIS key for the BSB alphanumeric system used to identify storm water structures is included in Appendix C.

SSWS identification is by common name as available for the existing structures listed in Appendix A. Additionally, a three-part alphanumeric code will accompany the common name, consistent with the GIS naming system developed for BSB's *Municipal Storm Water Improvements Plan* (March 2009). All SSWS structures will be given a unique alphanumeric code consisting of 1) a location code (e.g. the drainage basin), 2) a structure code (PND = Pond), and 3) an "S" (indicating SSWS) followed by a sequential ID number. For example, Lower Missoula Gulch Catch Basin 8 is a pond located in the West Side Basin; it would have a SSWS code of WS-PND-S0001. The following structure codes are utilized:

- PND = Pond
- D = Drainage Ditches, Channels and Biofiltration Swales
- I = Inlet
- M = Manhole
- C = Combination Manhole and Inlet
- O = Outfall
- HD = Hydrodynamic Device

- PVC, CMP, etc. = type of pipe material

Several components of the SSWS network will not be named. These components include trash racks, energy dissipaters, fences, gates and water quality signs. These will be inspected and maintained under the associated SSWS inspection sheets and all SSWS will be in a separate GIS layer maintained by BSB. A specific inspection form and map has been developed for the 31 SSWS identified in Appendix A. These forms will be completed and maintained by BSB personnel along with as-built reports for all structures. All inspection forms and as-built reports and maps will be kept on file in both electronic and hard copy format within the BSB Superfund Division.

O&M activities for BRES sites (under the separate approved BRES protocol) are currently being tracked in a cloud-based database that will identify and document sites that need Corrective Action Plan (CAP) work. BSB shall create a similar database to record inspections, track work orders, and produce required reports for Superfund Storm Water Structures and BRES sites with storm water features. The database will be submitted to the Agencies for review prior to implementation. Specific inspection forms are not used for maintenance of municipal infrastructure.

1.2 Ownership & Accessibility

Superfund Storm Water Structures are located on land owned by both public and private entities. Ownership is documented in the BSB GIS database. Maps included with this O&M Plan also show ownership, indexed to Table D-1 in Appendix D, listing private property owners, contact information, and access or scheduling procedures that must be followed to complete O&M tasks.

BSB storm water structures, sites, and access points are located on both public and private property. The BSB GIS database contains ownership information that should be checked before completing any inspection or maintenance activities. This information may include owner-specific requirements for notification, scheduling, and securing access to a site or structure. Maps provided in this O&M Plan and in the BSB GIS database provide ownership information for BSB storm water infrastructure. Private ownership is summarized in Table D-1; structures/sites not listed in Table D-1 are located on and accessed through public property, and do not require special arrangements or permission prior to O&M activities. BSB and AR will continue to pursue easements and access agreement on private parcels. In the absence of private landowner cooperation, agencies must assert CERCLA authority to secure access for maintenance purposes.

1.3 Health, Safety, and Environment

Butte-Silver Bow personnel shall follow all provisions of the Butte-Silver Bow Safety Policy at all times. If sites are located on private property or other areas with additional safety and health requirements, BSB shall follow those requirements. Any such requirements will be identified during the maintenance access process.

1.4 Inspection and Maintenance Procedures

Each component of the storm water system identified in this document will have a specified inspection protocol and frequency based on the type, size, and location of each structure. Detailed information on the required maintenance procedures for each type of structure is included in Section 2.0.

1.5 Prioritization of Basins

This document recognizes the importance of basins that report directly to Silver Bow Creek and have not been mitigated by previous Superfund actions (detention/retention basins, diversion to Berkeley Pit, etc.). BSB will continually evaluate the implementation of new Superfund remedies, and efforts will be made to prioritize maintenance and inspection in basins that report directly to Silver Bow Creek.

1.6 Sediment Disposal

For purposes of operational efficiency, sediments collected in and removed from the BSB storm water system within BPSOU will be transported to an EPA approved repository for final disposal. The approved sediment disposal sites for BSB are the BSB Mine Waste Repository and temporary short term disposal can be provided the Butte Reduction Works drying beds at the Butte Treatment Lagoons. Long term, final disposal site is the BSB MWR.

Areas designated for temporary storage or cleaning of equipment (vector truck washing) must be approved by the EPA and DEQ, and must be designed with appropriate BMPs to prevent sediments from being re-released into the storm water system and surface waters. The BSB Storm Water Ordinance, BSB Storm Water Engineering Standards, and Dirt Moving Protocols will be referenced for appropriate procedures and BMPs.

Saturated sediment must be dewatered sufficiently to allow transport prior to hauling, or lined trucks must be used for transport. Draining of sediments must be conducted in a manner that contains potentially contaminated water. The Butte Reduction Works drying beds at the Butte Treatment Lagoons is an EPA-approved temporary storage and sediment dewatering area.

1.7 Coordination with other Departments

A successful storm water maintenance program will require coordination and communication between various Butte-Silver Bow departments, as outlined in the organizational chart in Appendix E. The Superfund Division will be the primary entity responsible for the implementation of this plan; however, coordination with other County divisions will be critical to the program's success. The following divisions will be involved and in the implementation of the plan:

- GIS Department: The GIS Department will be responsible for updates and edits to site maps, as well as management of maintenance database information. GIS department will ensure that naming conventions and additional infrastructure work is incorporated into BSB's GIS database.
- Metro Sewer Division: Metro sewer division is responsible for maintenance of municipal storm water infrastructure. In areas where municipal infrastructure affects or is affected by Superfund

sites or structures, metro personnel will coordinate with the Superfund Division to address any issues.

- Road Division: The Road division is responsible for maintenance of the municipal and county road infrastructure. In areas where road infrastructure affects or is affected by Superfund sites or structures, Road division personnel will coordinate with the Superfund Division to address any issues. Maintenance and condition of Superfund structure culverts or ditches located within the County road system should be communicated between departments.
- Weed Department: An integral part of the maintenance plan is weed control. Excessive growth of any vegetation, including weeds, can impair the proper functioning of storm water facilities. The Weed Department is responsible for weed control on all Superfund Storm Water Structures and BRES sites. Maintenance procedures for vegetation and weed control are provided for each type of storm water component in this Plan.

Staff from the abovementioned departments will meet on a quarterly basis to address storm water maintenance needs.

1.8 Reporting

BSB maintenance personnel will perform regular maintenance work on storm water structures as defined in this document. All site inspection forms and maintenance activities will be completed and kept on file within the BSB Public Works department.

For the identified SSWS and BRES sites, BSB will compile all information into an annual maintenance report for the system which will be submitted to the agencies for review. This report will identify the effectiveness of existing maintenance and inspection protocol, identify any significant repairs, deviations, or changes from the specified O&M activities, and will include recommended changes to the plan, if necessary. Any health and safety issues or concerns will also be documented in the annual report. For BRES sites, an electronic database management tool has been developed to manage field inspection, development of Corrective Action Plans (CAPs) and completion of O&M reports which document maintenance activities. A similar database is planned for the SSWS, which will be completed in coordination with the agencies.

For elements of the BSB municipal storm water system, BSB will not prepare specific reports for agency review. Alternatively, BSB will document time and expenses for storm water maintenance activities through its typical operations and accounting practices. These records will be made available upon request from the agencies.

New infrastructure added under the Superfund program shall be incorporated into the program and this document upon completion and turn-over of the design and as-built documents to BSB, and a site meeting and walkthrough to review O&M requirements.

1.9 Staffing Requirements

Inspection and maintenance of SSWS, BRES storm water features, and municipal infrastructure will be conducted by a combination of BSB Superfund Division and BSB Public Works Department staff. Private contractors may be used for the 5-year SSWS evaluation and for larger maintenance and repair activities, if determined necessary. Staff requirements may vary depending on the frequency and intensity of storm events, as well as the potential for construction of additional SSWS. All staff conducting operation and maintenance work will be appropriately trained in inspection and maintenance procedures, and relevant hazardous waste and safety requirements. BSB Superfund Division Staff are detailed in **Table 1**.

Table 1. BSB Superfund Division Staff

Name	Position	Responsibility
Eric Hassler	Operations Manager – Superfund Division	Overall management of Superfund construction and O&M activities
Julia Crain	Information Technology Manager	Management of Data and Reporting
Tom Malloy	Site Inspector	Inspection and compliance of SSWS, BRES, and storm water construction sites
Michelle Bay	Data Coordinator	Data entry and Quality assurance/quality control
Brandon Warner	Water Quality District Coordinator	Sampling, inspection, and compliance
Field Crew (3 Operators, 2 Laborers)	Superfund Maintenance Crew	Field crews responsible for maintenance work on identified sites

1.10 Contingency Plan

During the implementation of this operation and maintenance schedule, BSB realizes that an unanticipated event or condition may occur that is outside of the scope of this plan that results in damage or failure of a SSWS. Such events may include but are not limited to a flood event (or other natural disaster), vandalism, illegal dumping, or structural failure.

The BSB Metro Sewer Maintenance Division will be the primary entity responsible for activating the contingency plan. The contingency plan will consist of the following actions:

Response

Upon notification of an incident that requires activation of the Contingency plan, BSB Public Works Department staff will:

- Conduct a preliminary assessment of the damaged SSWS. The assessment will identify the following information: date of inspection, name of inspector, name of the structure(s), the type of damage associated with the structure(s), reason for failure/impact, areas affected, and the appropriate entities for internal and external notification. Responsible Entity: BSB Metro Sewer Maintenance.
- Notify the appropriate entity to assist in addressing the problem, as necessary:

Internal Notification

- Flooding/Natural Disaster: BSB Emergency Management Agency – 497-6295
- Vandalism: BSB Police Department – 497-1120 or 911
- Fire: BSB Fire Department – 497-6481 or 911
- Illegal Dumping: BSB Health Department, Dan Powers – 497-5020
- Public Works Director, Dave Schultz – 497-6520
- Superfund Coordinator, Jon Sesso – 497-6254
- Superfund O&M Manager – Eric Hassler – 490-5794

External Notification

- EPA: Nikia Greene – 425-3703
- MDEQ: Daryl Reed – 444-6433
- BP/ARCO: Loren Burmeister– 782-9964

Replacement/Restoration

Once the threat or damage has been addressed by the appropriate entity, BSB staff will consult with the appropriate entities and develop a corrective action plan to make necessary repairs to storm water infrastructure. The corrective action plan will also detail actions taken to prevent future damage to the infrastructure. The corrective action plan will be submitted to EPA, MDEQ, and ARCO for review prior to implementation. Repair work will be conducted and supervised by BSB Superfund Division or Metro Sewer Maintenance crews, or other specified entity as identified by the agencies.

Resumption

Once all repairs are completed and the infrastructure has been inspected by the agencies and any other required parties, the infrastructure will be returned to service.

1.11 Incorporation of New Sites

Based on final remedy requirements and the results of future monitoring and maintenance, additional storm water structures may be constructed, and additional source area sites may be identified for remedy actions. If this situation occurs, sites will be submitted to EPA for inclusion into this plan, as either a Superfund Storm Water Structure or a BRES site with a storm water feature. Appropriate as-built information and inspection protocols will be developed for each new structure or site and added to this plan.

2.0 Storm Water System Components

2.1 Catch Basins (Detention/Retention Ponds)

A storm water catch basin (also known as a detention or retention pond) is an open basin built by excavating below existing ground or by constructing aboveground berms (embankments). A catch basin temporarily stores storm water runoff during rain events and slowly releases it through an outlet (control structure). Catch basins are designed to store storm water (up to a specified storm event) for subsequent infiltration and evaporation. Catch Basins contain an emergency overflow structure for the safe conveyance of water from a storm event greater than the design event. Catch basins require proper maintenance to ensure proper operation. Access to basins may vary greatly; they may be fenced off for controlled access or may appear in more natural or park-like settings that do not limit access and use.

The following types of catch basins may be a SSWS:

- Wet Pond – has permanent pool and runoff from each storm event is detained and treated until displaced by the next event.
- Dry Pond – does not have a permanent pool as it is designed to release or infiltrate storm water before the next storm water event.
- Multiple Pond System – a group of ponds designed to collectively treat the water quality design storm.
- Shallow Wetland – has wetland vegetation on the pond bottom to enhance pollutant removal, usually has a base flow to sustain wetland vegetation.
- Pond/Wetland System – a shallow wetland with a deep permanent pool upstream of the wetland containing wetland vegetation.

Facility components that are typically associated with a catch basin include:

- Access road or easement
- Fence, gate, and water quality sign
- Control structure/flow restrictor
- Energy dissipaters
- Conveyance storm water pipe or ditch
- Sediment forebays

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Site specific inspection forms have been developed for each SSWS and will be used for semi-annual inspections by BSB personnel. A more detailed evaluation of the ponds will be completed by an engineer on a less frequent basis, approximately once every five years. Inspection personnel will document the common name and GIS ID number, if applicable, of any associated structures inspected during the pond inspection. Inspection Forms are included in Appendix F.

Location: Catch basin SSWS are shown on the map provided as Figure 1.

An overview of inspection and maintenance procedures for detention/retention ponds is included below. Refer to Table E-1 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the system is functioning properly following maintenance.

Inspection

Catch basins should be inspected in the spring and the fall and as soon as practicable after a major storm event or series of events that equal or exceed 0.50-inches of rainfall in a 24-hour period of time. The rain gauge at the Kelley Mine Yard will be used for rainfall monitoring. Many structures are susceptible to debris blockage; therefore, it may be determined that the inspections should occur more frequently after smaller storm events. In the event that an inspection is required for specific structures after smaller storm events, this O&M plan will be revised accordingly.

If ponds are lined with HDPE or similar materials, it is imperative that the integrity of the liner be inspected for seam separation, tears, and punctures.

Inspect the facility for accumulated sediments, litter, debris, oil or other pollutants, dead vegetation, or the invasion of noxious weeds, shrubs, or trees. Identify upstream storm water sources contributing pollution to the facility. Identify any signs of rodent holes in embankments as rodent holes can lead to failures of the embankment. Identify any signs of embankment settlement or sinkholes as these are serious problems. Identify sand boils or seepage water surfacing downstream of embankments. Inspect emergency spillways to ensure they are covered with a minimum of 12 inches of riprap or have adequate vegetation for erosion protection. An inspection form documenting the date and time of the inspection, the inspector, the condition of the infrastructure, corrective actions taken (if any), and any other pertinent information, must be completed during the inspection procedure.

Maintenance Summary/Tasks

- Remove sediment from catch basins when sediment accumulation exceeds 10% of the design pond capacity or as determined necessary to maintain pond design capacity and functionality. Sediment removal will be focused on sediment forebays or other engineered areas where maintenance equipment has adequate access. Removed sediments must be transported for disposal as described in Section 1.6 above.
- Remove sediment from catch basins when the facility does not drain between storms.
- Sediment removal should be conducted during the drier summer/fall months.
- Detention/retention ponds and outflow control structures are not to be altered from the original approved design.
- Remove accumulated litter.
- Remove any pollutants with volumes greater than a surface sheen.
- Remove debris/obstructions from control structures.
- Remove noxious weeds, shrubs, or trees that are growing within the pond, on side slopes, berms, or within the emergency overflow area. Trees and shrubs can block flows or lead to berm failure and should not be allowed to grow in the pond or on berms. Trees and shrubbery may be allowed to grow around the perimeter of the pond unless that growth interferes with the facility's proper function or maintenance activities.
- If vegetation is present, mow vegetation to match surrounding areas or to sustain additional intended uses of the facility such as recreation areas or wildlife habitat.
- Use mechanical methods to control weeds. Pesticides, herbicides, and fertilizers should not be used in storm water control facilities.
- Repair eroded slopes when rills form.
- Reseed bare areas with vegetation suitable for the site.
- Where applicable, repair pond liners if tears, punctures, and seam separation is visible and repair or replace where there are more than three holes greater than 1/4-inch diameter.
- When possible, maintenance and repairs should be timed to avoid or minimize impacts on wildlife.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Maintains or restores the intended infrastructure function.
- Minimizes scour damage to downstream conveyance pipes or ditches.

- Prevents or reduces flooding to protect infrastructure and/or structures.

Notes

Following proper maintenance procedures for catch basins ensures that the basins operate as designed, have adequate storage and/or infiltration capacities, and minimize or prevent the transport of sediments and pollutants downstream.

2.2 Drainage Ditches

Drainage ditches are open channels, often manmade, that are designed to carry storm water. Drainage ditches are often vegetated, but can be lined with riprap or concrete. Ditches must be maintained to prevent localized flooding during storm events.

Facility objects that are typically associated with Drainage Ditches include:

- Access road or easement
- Fence, gate, and water quality sign
- Energy dissipaters
- Debris barrier (e.g. trash rack)
- Catch basins/drop inlets
- Sediment trap

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Site specific inspection forms have been developed for each SSWS and will be used for semi-annual inspections by BSB personnel. A more detailed evaluation of the ditches will be completed by an engineer on a less frequent basis, approximately once every five years. Document the ID number, if applicable, of any associated structures included with the inspection of the ditch. Inspection Forms are included in Appendix F.

Location: Drainage Ditches are shown on the map provided as Figure 1.

An overview of inspection and maintenance procedures for drainage ditches is included below. Refer to Table E-2 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the system is functioning properly and/or following maintenance.

Inspection

Drainage ditches should be inspected during routine site maintenance of adjacent infrastructure or in the spring and the fall and as soon as practicable after a major storm event or series of events that equal

or exceed 0.50-inches of rainfall in a 24-hour period of time. The rain gauge at the Kelley Mine Yard will be used for rainfall monitoring. Inspections should look for areas of soil erosion, concrete deterioration, and areas of sediment, trash, or debris accumulations. If areas with significant sediment accumulations are discovered, the source area for the sediment should be determined if possible. An inspection form documenting the date and time of the inspection, the inspector, the condition of the infrastructure, corrective actions taken (if any), and any other pertinent information, must be completed during the inspection procedure.

Maintenance Summary/Tasks

- Perform maintenance during the growing season when vegetation is easy to reestablish.
- Remove sediment accumulations greater than 6-inches in depth or that significantly reduce the designed hydraulic capacity.
- A typical application is to install strategic concrete or alternative hard-surfaced sediment traps within the vegetated channels that can be cleaned periodically without affecting the established vegetation. If present, remove sediment accumulations that significantly reduce the designed hydraulic capacity.
- Clean vegetated ditches in sections, leaving undisturbed areas to filter sediments between cleaned areas.
- Remove vegetation only when there is visual evidence that it reduces the hydraulic capacity of the ditch. Never remove vegetation in excess of what is needed because vegetation is an effective sediment filter and protects the channel bed from erosion.
- Trap sediments that are generated by the maintenance activities. Use sediment-trapping BMPs at the lower end of each excavated area. Refer to the BSB Storm Water Ordinance for BMPs to be used during typical construction and cleaning activities.
- Vegetation removed and sediments trapped must be taken off-site to prevent these materials from reentering ditches. Removed sediments must be transported for disposal as described in Section 1.6 above.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Prevents roads, parking areas, and drainage systems from becoming pollutant sources.
- Maintains or restores the intended infrastructure function.
- Avoids or minimizes vegetation removal.
- Prevents or reduces flooding.
- Protects infrastructure.

Notes

Reseed bare soils and install temporary erosion control BMPs according to Butte Hill Revegetation Specifications and BSB Erosion Control and Dirt Moving Protocols. Trees and shrubbery should not be allowed to grow within drainage ditches as they impede maintenance activities and can interfere with the facility's function.

2.3 Biofiltration Swales

A biofiltration swale uses grass or other dense vegetation to filter sediment and oily materials out of storm water. Usually they look like flat-bottomed channels or ditches with grass growing in them. Biofiltration uses vegetation in conjunction with slow and shallow-depth flow for runoff treatment. As runoff passes through the vegetation, pollutants are removed through the combined effects of filtration, infiltration, and settling. These effects are aided by the reduction of the velocity of storm water as it passes through the biofilter.

Biofiltration swales provide storm water quality control (treatment), but do not provide storm water quantity control (detention/retention). Swales are storm water treatment devices that must be properly maintained to sustain pollutant removal capacity.

Facility objects that are often associated with a typical biofiltration swale include:

- Access road or easement
- Fence, gate, and water quality sign
- Energy dissipaters
- Debris barrier (e.g. trash rack)
- Catch basins/drop inlets
- Sediment trap

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Site specific forms have been developed for each SSWS and will be used for semi-annual inspections by BSB personnel. Document the ID number, if applicable, of any associated structures included with the inspection of the swale. Inspection Forms are included in Appendix F. Separate forms are provided for each type of Superfund Storm Water System Component.

Location: Biofiltration swales are shown on map provided as Figure 1.

An overview of inspection and maintenance procedures for biofiltration swales is included below. Refer to Table E-3 in Appendix E for a detailed listing of structural features, potential defects, conditions

requiring maintenance, and the results expected when the system is functioning properly and/or following maintenance.

Inspection

Swales need to be well maintained to treat storm water. Inspect in the spring and the fall and as soon as practicable after a major storm event or series of events that equal or exceed 0.50-inches of rainfall in a 24-hour period of time. The rain gauge at the Kelley Mine Yard will be used for rainfall monitoring. Inspect for problems such as channeling flow, rills, bare ground, sediment accumulation, oily material, and debris. Vegetation bare spots shall be identified and maintained with seeding to achieve adequate grass growth. Identify and remove pollutant sources that are discharging to the swale. Maintain access to inlet and outlet structures for pollutant removal, and maintain access to the swale for mowing and noxious weed removal.

Maintenance Procedures

- Remove leaves, litter, sediment, oily materials, and grass cuttings when mowing or at any time that debris is observed in the swale as this can cause blockage of inlets and outlets.
- Clear inlets, outlets, curb cuts, and level spreaders of debris to prevent blockage of storm water flow.
- Use a rake and shovel to remove, by hand, sediment accumulations greater than 2-inches thick that cover grass areas; avoid vegetation removal. Reseed bare areas. Removed sediments must be transported to an EPA-approved repository for disposal.
- Mow to keep grass at the maximum height (9-inches). Mow to no less than 4-inches in height and remove clippings from the swale. Preserve healthy vegetation or reestablish vegetation where needed. Seed bare spots according to Butte Hill Revegetation Specifications. Use appropriate BMPs such as hydroseeding or mulches to cover bare soils. Refer to the BSB Storm Water Ordinance for BMPs to be used during typical construction and cleaning activities.
- Vegetation removed must be taken off-site to prevent these materials from reentering swales.

Maintenance Goals

- Avoid or minimize sediment and pollutant discharges from the surrounding area.
- Prevents roads, parking areas, and drainage systems from becoming pollutant sources.
- Maintains or restores the intended infrastructure function.
- Meet public expectations for aesthetics.

Notes

Trees and shrubbery are not allowed to grow within the biofiltration swale as they interfere with the facility's function and maintenance activities. Level spreaders must be in proper working order for

swales to function properly. Where level spreaders are damaged, sunken, or bypassed by erosion, repair them to design standards. If there is a problem with grass dying due to the swale being flooded during the wet season, consider two options: convert the swale vegetation to a plant variety that can tolerate flooding, or improve swale drainage.

2.4 Trash Rack (Debris Barrier or Access Barrier)

A debris barrier is a bar grate over the open end of a culvert or storm water conveyance pipe. The intent of a debris barrier is to prevent large materials from entering a closed pipe system. Debris barriers are typically located on the control structure outlet pipe. If a debris barrier is not located on the outlet pipe, one should be installed to prevent plugging of the control structure and possible flooding.

An access barrier is similar to a debris barrier but is installed on all pipe ends that exceed 18 inches in diameter. Their function is to prevent debris and unauthorized access into the storm conveyance pipe. Only qualified personnel should attempt to maintain or remove debris from the barrier when water is flowing through the conveyance pipe.

Facility objects that are often associated with a trash rack include:

- Access road or easement
- Fence, gate, and water quality sign
- Energy dissipaters

Documentation

Identification: Trash racks are not given dedicated identification numbers. Identify the trash rack according to the associated major structure, e.g. drainage ditch, detention pond, etc.

Inspection Form: Depending on the type of SSWS, trash rack inspection details may be included on the major structure inspection form. Document the ID number of the major structure associated with the inspection of the rack. Inspection Forms are included in Appendix F.

Location: Trash racks are not specifically identified, but will be part of other superfund structures.

An overview of inspection and maintenance procedures for trash racks is included below. Refer to Table E-4 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the structure is functioning properly and/or following maintenance.

Inspection

Trash racks should be inspected in the spring and in the fall. Additional inspections may be needed after significant rainfall events. Trash racks should be inspected for accumulations of debris, trash, or sediments and for damaged or missing racks and bars. An inspection form documenting the date and

time of the inspection, the inspector, the condition of the infrastructure, corrective actions taken (if any), and any other pertinent information, must be completed during the inspection procedure.

Maintenance Procedures

- Remove debris, trash, and sediments when openings are obstructed and impacting ability of storm water to pass through.
- Straighten bent bars back into position.
- Replace bars that have rusted to the point where they may be easily removed.
- Replace missing racks or bars.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Prevents roads, parking areas, and drainage systems from becoming pollutant sources.
- Maintains or restores the intended infrastructure function.
- Prevents or reduces flooding to protect infrastructure.

Notes

Reseed bare soils after removing accumulated sediments to minimize sediment transport from disturbed areas. Vegetation and sediments removed must be taken off-site to prevent these materials from reentering ditches. Removed sediments must be transported for disposal as described in Section 1.6 above.

2.5 Conveyance Pipes and Culverts

Inlet and outlet storm water pipes and culverts convey storm water in, through, and out of storm water facilities. Pipes are built from many materials and are sometimes perforated to allow storm water to infiltrate into the ground. Storm water pipes are cleaned to remove sediment or blockages when problems are identified. Storm water pipes must be clear of obstructions and breaks to prevent localized flooding. Storm water pipes must also have sufficient integrity to convey runoff with minimal infiltration or seepage of water into or out of the pipe. All storm water pipes should be in proper working order and free of the possible defects listed below.

Visual inspections may be conducted on shorter culverts and accessible sections of conveyance pipe connected to major storm water structures such as inlets, manholes, ditches, etc. Longer culverts and pipes will require inspection using remote closed caption television (CCTV) equipment.

Facility objects that are often associated with conveyance pipes include:

- Inlets and manholes

- Drop inlets
- Trash racks
- Energy dissipaters

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Conveyance pipes are typically included as part of site specific inspection forms that have been developed for each SSWS and will be used for semi-annual inspections by BSB personnel. Document the ID number of the major structure and identify connecting conveyance pipes.

Location: Conveyance pipes and culverts are shown on maps provided as Figure 3.

An overview of inspection and maintenance procedures for conveyance pipes and culverts is included below. Refer to Table E-5 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the structure is functioning properly and/or following maintenance.

Inspection

Perform visual inspections of conveyance pipes during O&M for associated structures. For example, inspect all pipes connected to an inlet or manhole during cleaning or minor repairs. Culverts should be inspected annually, and during O&M for associated structures, such as during the inspection of a ditch leading to a culvert. Perform video inspections when evidence, such as recurring blockages or excessive sediment accumulation, suggests a problem in the pipe that cannot be observed through simple visual inspection.

Inspect pipes and culverts for obstructions such as roots, debris, and sedimentation. Inspect pipes for dents, cracks, breaks, or deterioration from rust (if applicable). Inspect associated structures such as trash racks for missing racks or bars. Inspect pipes for obstructions, collapsed or caved in sections, pipe deterioration, and broken lateral connections.

Maintenance Procedures

Clean pipes when visual inspection indicates reduced capacity. When cleaning a pipe, minimize sediment and debris discharges from pipes to the storm sewer. Install downstream debris traps (where applicable) before cleaning and then remove any accumulated material. A vacuum truck will be used to remove sediment accumulated during jetting.

The condition of the pipe must be carefully evaluated before considering the use of mechanical methods to remove roots or other obstructions. Do not put root-dissolving chemicals in storm sewer pipes. If there is a problem, remove the vegetation over the line.

Maintenance Goals

- Avoid or minimize sediment and pollutant discharges from the work area
- Prevent parking areas, roads, drainage systems, and drainage facilities from becoming pollutant sources.
- Maintain or restore the intended infrastructure function.
- Prevent or reduce flooding.
- Protect infrastructure.

Notes

Vegetation and sediments removed must be taken off-site to prevent these materials from re-entering conveyance pipes. Removed sediments must be transported to for disposal as described in Section 1.6 above. Repair or replace pipes when a dent or break closes more than 20 percent of the pipe diameter. Repair or replace pipes damaged by rust or deterioration.

2.6 Drop Inlets, Catch Basins, Sediment Traps, and Manholes

Drop inlets are vertical risers connected to an underground culvert or piping system. They are designed to collect storm water off roads and other surfaces during storm events and convey it to storm drain piping/culverts. Typical drop inlets are fitted with metal grates.

A catch basin is a receptacle located at a drop inlet that is designed to retain sediment, debris, trash, oils, and other obstructions that would normally enter the storm sewer system. Typical catch basins have inlet grates and a small storage volume (sump) to collect sediment and debris. The terms drop inlet and catch basin are often used interchangeably; however, storage capacity must be present for a structure to be considered a catch basin.

Sediment traps resemble larger drop inlets or in-line catch basins designed to have larger sediment trapping capabilities. Surface flow is routed into the sediment trap which fills with water and sedimentation occurs. The surface outflow elevation is set at a slightly lower elevation than the inflow. Once the sediment trap has filled with water, outflow is routed into another man-made ditch or drop inlet. Sediment in the sediment trap can easily be removed with a skid-steer or vacuum (vactor) truck.

Manholes are typically placed at locations where storm sewer pipes join or have abrupt changes in direction. They are included in a piping system to assist with flow routing and to allow for maintenance access. Manholes may have steps mounted on the side of the structure to allow man access, and may be fitted with a grated inlet to collect runoff (similar to a drop inlet). Drop inlets, catch basins, sediment traps, and manholes need to be inspected and cleaned to remove accumulated sediments, debris, and trash. The most common tool for cleaning these structures is a truck with a tank and vacuum hose (vactor truck) to remove sediment and debris from the sump.

Drop inlets and manholes are generally considered confined spaces and should not be entered unless maintenance personnel have OSHA approved training and equipment. Manholes and drop inlets may contain dangerous gasses that can cause injury or death if safety precautions are not followed.

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Drop inlets, catch basins, sediment traps, and manholes are typically included on the site specific inspection forms that will be used for semi-annual inspections by BSB personnel. Associated structures such as conveyance pipes will be recorded by noting the pipe ID number. Inspection Checklist forms are included in Appendix F.

Location: Drop inlets, catch basins, sediment traps, and manholes are located on various sites within BPSOU. The municipal system is shown on maps provided as Figure 3.

An overview of inspection and maintenance procedures for drop inlets, catch basins, sediment traps, and manholes is included below. Refer to Table E-6 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the structure is functioning properly and/or following maintenance.

Inspection

Inlets, catch basins, sediment traps, and manholes will be inspected as time allows. In the 2009 BSB Storm Water Municipal Improvement Plan, approximately 1,928 inlets and 225 manholes were identified. Additional inlets and manholes may be identified during future maintenance activities. Priority will be given to inlets, catch basins and manholes with known problems and complaints from the public. Priority will also be given to structures that are located within or near a SSWS or BRES site. Inspections should be performed after completing street sweeping to remove sediments and traction sand from public roadways. Inlets should be inspected for accumulated sediments, debris, and trash that may reduce the inlet's efficiency to collect and convey storm water. Inlets should also be inspected for structural damage that prevents the inlet from functioning as designed.

Manhole, drop inlet, sediment trap, and catch basin frames and lids should be inspected for cracks, wear, or other structural damage. Metal grates and the invert/sump of the structure should be inspected for sediment accumulation, debris, trash, or other blockages that restrict flow from entering the downstream conveyance pipe or ditch. If sediment accumulation restricts the conveyance to the downstream pipe or ditch or prevents additional storage of material, the sediment shall be removed.

If storm water structures exhibit higher than normal volumes of collected materials or oily residues, the vicinity around the inlet, catch basin, or manhole should be examined for contributing source areas or illicit connections.

Maintenance Procedures

- Clean grates to remove debris and litter.
- Clean inlets to prevent captured materials from being transported into conveyance pipes or to downstream waters.
- Clean catch basins when they become one third full to maintain sediment-trapping capacities.
- Clean manholes and sediment traps where sediments, debris, or trash have accumulated or blockages prevent storm water from freely flowing into the downstream conveyance pipe.
- Repair structural damage.
- Replace inlets, catch basins, sediment traps, or manholes with structural damage that is not repairable.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Prevents roads, parking areas, and drainage systems from becoming pollutant sources.
- Maintains or restores the intended infrastructure function.
- Minimizes scour damage to conveyance pipes.
- Prevents or reduces flooding to protect infrastructure.

Notes

Cleaning must be performed in a manner that prevents sediment and contaminated water from being discharged back into the storm sewer system. Removed sediments must be transported to an EPA-approved repository for disposal as described in Section 1.6 above.

2.7 Energy Dissipaters

Energy dissipaters are placed at storm drain outfalls, manholes, or locations of high velocity and are critical for preventing erosion and controlling the flow of water as it enters ditches, channels, or ponds. There are many designs for energy dissipaters including rock splash pads, wire gabion baskets, trenches, and specially designed pools or manholes.

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Energy dissipaters are typically included in the site specific inspection forms that will be used for semi-annual inspections by BSB personnel. Inspection Checklist forms are included in Appendix E. Separate forms are provided for each type of Superfund Storm Water Structure.

Location: Energy Dissipaters are shown on maps provided as Figure 1 and Figure 2.

An overview of inspection and maintenance procedures for energy dissipaters is included below. Refer to Table E-7 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the structure is functioning properly and/or following maintenance.

Inspection

All storm sewer outfalls should be inspected in the spring and in the fall and as soon as practicable after a major storm event or series of events that equal or exceed 0.50-inches of rainfall in a 24-hour period of time. The rain gauge at the Kelley Mine Yard will be used for rainfall monitoring. Outfalls that do not have energy dissipaters should be noted. Outfalls should be inspected for signs of oily residues, erosion and/or sediment deposition. Significant erosion around outfalls is an indicator that a different energy dissipater may need to be constructed and possibly designed for the higher storm water flow rates and velocities. An inspection form documenting the date and time of the inspection, the inspector, the condition of the infrastructure, corrective actions taken (if any), and any other pertinent information, must be completed during the inspection procedure.

Maintenance Procedures

- Remove any accumulated sediments, debris, or trash.
- Replace missing or removed rocks from rock splash pads to cover exposed soil.
- Replace concrete energy dissipaters when the structure deteriorates significantly such that the structure no longer functions as designed, becomes structurally unsound, or the downstream channel shows signs of significant erosion.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Prevents erosion and vegetation loss from downstream infrastructure
- Maintains or restores the intended infrastructure function.
- Prevents or reduces flooding to protect infrastructure.

Notes

Proper maintenance of energy dissipaters minimizes the potential impact on downstream facilities or surface waters. Removed sediments must be transported to an EPA-approved repository for disposal. Reseed bare soils after removing accumulated sediments to minimize sediment transport from disturbed areas.

2.8 Hydrodynamic Devices

A hydrodynamic device (HD) or vortex-enhanced sedimentation vault consists of a cylindrical vessel designed so that the inlet flow spirals around the perimeter in a vortex-type action causing the heavier

particles to settle out of the storm water. HDs use a vortex-enhanced settling mechanism (swirl-concentration) to capture settleable solids, and a baffle to capture floatables, oil, and grease. A diversion structure connected to the HD bypasses storm water discharges greater than the HD design flow rate.

Hydrodynamic units are proprietary manufactured systems. Refer to the manufacturer's publications for additional maintenance information.

Facility objects that are often associated with a hydrodynamic device include:

- access road or easement
- fence, gate, and water quality sign
- diversion and bypass structures
- conveyance storm water pipe

Documentation

Identification: Follow alpha-numeric identification guidance in Section 1.1.

Inspection Form: Site specific inspection forms have been developed for hydrodynamic devices and will be used for semi-annual inspections by BSB personnel. A more detailed evaluation of the HD will be completed by an engineer on a less frequent basis, approximately once every five years. Inspection Forms are included in Appendix F.

Location: Hydrodynamic Devices as shown on maps provided as Figure 1 and Figure 2.

An overview of inspection and maintenance procedures for hydrodynamic devices is included below. Refer to Table E-8 in Appendix E for a detailed listing of structural features, potential defects, conditions requiring maintenance, and the results expected when the structure is functioning properly and/or following maintenance.

Inspection

Inspect Hydrodynamic Devices in the spring and in the fall at a minimum and more frequently for streets or areas that have high sediment loads. Inspect device inlets for accumulated sediments, debris, and trash that may reduce the inlet's efficiency to convey storm water. Inspect the internal structures of hydrodynamic devices for cracks, wear, or other structural damage. Inspect the device for sediment accumulations, debris, trash, or other blockages that restrict flow from entering or exiting the device. If storm water structures exhibit higher than normal volumes of collected materials or oily residues, inspect the drainage area reporting to the hydrodynamic device for contributing source areas. Inspections may occur more frequently if initial monitoring and monitoring after large storm events indicates that more frequent inspections are necessary.

Maintenance Procedures

- Clean grates (if applicable) to remove debris and litter.
- Measure from finished grade to the top of sediment pile in the sump, and record the measurement.
- Compare the measurement to the known (as-built) distance from grade to the sump bottom.
- Clean sumps at least twice per year, or when they reach 75% of capacity to maintain sediment-trapping capacities.
- Repair structural damage.
- Replace devices with structural damage that is not repairable.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Prevents roads, parking areas, and drainage systems from becoming pollutant sources.
- Maintains or restores the intended infrastructure function.
- Minimizes scour damage to conveyance pipes.
- Prevents or reduces flooding to protect infrastructure.

Notes

Cleaning must be performed in a manner that prevents sediment and contaminated water from being discharged back into the storm sewer system. Removed sediments must be transported to an EPA-approved repository for disposal. In the event of an oil or gasoline spill, Butte-Silver Bow will immediately clean up small spills (less than 25-gallons) with appropriate spill response, absorbent materials, and a vacuum truck, as required. Contaminated materials will be containerized and disposed of according to applicable local, state, and federal regulations. Butte-Silver Bow will report large spills (greater than 25-gallons) immediately to Montana Disaster and Emergency Services and contract with a private contractor for cleanup.

2.9 Fence, Gate, and/or Water Quality Sign

Storm water facilities such as detention ponds or drainage ditches often have fences to protect them from damage and keep people away from ponds or hazardous areas. Certain facilities such as biofiltration swales may also have informational signs telling the public that the swale is a storm water facility.

Documentation

Identification: Fences, gates and water quality signs are not considered separate structures.

Inspection Form: Information related to fences, gates, and/or water quality signs will be included on site specific forms that have been developed for each SSWS, as appropriate.

Location: Fences, gates, and water quality signs are not specifically identified. Information related to these features will be included on site specific forms, as appropriate.

An overview of inspection and maintenance procedures for hydrodynamic devices is included below. Maintenance of fences, gates, and water quality signs will be conducted as part of the site specific superfund storm water structure inspections.

Inspection

Inspect fences, gates, and signage during routine inspections of associated facilities and structures, and note any conditions requiring attention on the inspection form for the major structure or facility.

Maintenance Procedures

- Replace missing gates and locks, if applicable.
- Repair or replace damaged signs and sign posts.
- Repair breaks in fences or openings under fences that may allow entry by people or animals.

2.10 BRES Sites with Storm Water Features

There are currently 178 reclaimed mine waste source areas within the BPSOU that are managed under the Butte Reclamation Evaluation System (BRES) protocol. BRES sites typically consist of an engineered and vegetated cap consisting of clean fill. Some sites have engineered storm water infrastructure installed to manage and control runoff and preserve the integrity of the cap. Storm water features are similar to those present on other identified SSWS, such as ditches, culverts, piping, drop inlets, sediment traps, etc. BRES sites are managed through an agency-approved protocol where 25% of the sites are inspected per year, resulting in all BRES sites being inspected every four years. Vegetation and storm water improvements are conducted on inspected sites each year, as necessary.

Through previous inspections, it has been documented that some BRES storm water features require maintenance more frequently than once every four years. This document has identified BRES sites with engineered storm water infrastructure that will be inspected on a more frequent basis according to Section 3.0. These sites are provided in Appendix B and are shown on Figures 4a through 4h.

BSB will conduct inspections on these identified BRES sites independent of the regular BRES protocol, according to the inspection schedule identified in Section 3.0.

Documentation

Identification: BRES sites will be identified using their approved site name, as detailed in Appendix B.

Inspection Form: A general BRES site inspection form has been developed for storm water feature inspections and is included in Appendix G. Each BRES site will be identified on the inspection form.

Location: BRES sites with storm water features are identified in Appendix B.

Inspection and maintenance procedures for BRES sites will be consistent with those identified under each specific storm water feature.

Inspection

Inspect selected BRES sites with storm water features on an annual basis, and note any conditions requiring attention on the inspection form for each individual site. BRES storm water infrastructure inspections will be an iterative process, and sites will be evaluated annually for maintenance needs. BRES sites that do not require maintenance for 3 consecutive inspections will be removed from the annual storm water O&M list. Sites requiring continued maintenance will remain on the list, and efforts will be made to identify/redesign/repair and repair the source of the problem.

Maintenance Procedures

- Perform maintenance during the growing season when vegetation is easy to reestablish.
- Remove sediment accumulations that significantly reduce the designed or historical hydraulic capacity.
- Vegetation removed and sediments trapped must be taken off-site to prevent these materials from reentering ditches. Removed sediments must be transported to an EPA-approved repository for disposal.
- Clear inlets, outlets, curb cuts, and level spreaders of debris to prevent blockage of storm water flow.

Maintenance Goals

- Prevents or minimizes sediment and pollutant discharges from the area.
- Maintains or restores the intended infrastructure function.
- Avoids or minimizes vegetation removal.
- Prevents or reduces flooding.
- Protects infrastructure.

2.11 BSB Municipal Storm Water Infrastructure

BSB operates and maintains its municipal storm water system which consists of an extensive network of pipes, manholes, drop inlets, ditches, and culverts. BSB conducts regular maintenance of this system to ensure that it remains operational to convey storm water from the city to area receiving waters. Periodic storm water maintenance is typically only conducted after storm events listed in Table 3.1

below, or in response to calls from the public. Similar to other Superfund infrastructure, some areas of BSB's system have recurring problems and require more frequent maintenance.

As part of its Superfund O&M responsibilities, BSB will conduct annual maintenance on its storm water infrastructure within BPSOU. Maintenance activities will focus on the following areas:

- Areas surrounding identified SSWS, BRES sites, or where municipal infrastructure is directly related to the performance of a SSWS.
- Areas that experience frequent plugging or require frequent maintenance to avoid flooding.

As identified in its *Municipal Storm Water Improvements Plan* (WET/M-M, 2009) and future updates, BSB will continue to invest in capital improvement projects to repair areas requiring frequent maintenance and replace aging infrastructure within BPSOU.

Inspection

Inspect municipal storm water infrastructure on a regular basis as time and resources allow, and address any outstanding maintenance issues. Municipal infrastructure that is near SSWS or BRES sites will be given priority.

Maintenance Procedures

- Perform visual inspections of drop inlets and catch basins, and closed circuit television (CCTV) inspection of pipes and culverts throughout the municipal storm water system located within the BPSOU boundary.
- Remove sediment accumulations that significantly reduce the designed or historical hydraulic capacity or functionality of the system. Removal will primarily be conducted using a vactor truck or small excavating equipment.
- Sediment removed must be taken off-site to prevent these materials from reentering ditches. Removed sediments must be transported to an EPA-approved repository for disposal.
- Clear inlets, outlets, pipes, curb and gutters of debris to prevent blockage of storm water flow.

Maintenance Goals

- Prevents or minimizes sediment from entering the municipal system and discharging from the area to receiving waters.
- Maintains or restores the intended infrastructure function.
- Prevents or reduces flooding.
- Protects infrastructure.

3.0 Inspection Schedule

Table 3.1 includes an inspection schedule summary for each storm water infrastructure component.

Table 3.1 Storm Water Infrastructure Inspection Frequency Summary

SW Infrastructure Component	Seasonal Inspections	Event Based Inspections
1. Superfund SW Structures	Biannual - Spring/Fall	0.50-inches/24-Hours
2. BRES Sites with SW Infrastructure	Annual – Spring	Agency/Citizen Reports
3. BSB Municipal System	Continuous	Agency/Citizen Reports

Appendix A

List of Superfund Storm Water Structures

List of Superfund Storm Water Structures

The following is a list of Superfund Storm Water Structures (SSWS) as defined in Definition 119 of the Allocation Agreement and shown on the accompanying Map in Figure 1. This list shall be updated if additional Superfund Storm Water Structures are added in the future, after they have been approved by the EPA and formalized in additional Allocation Agreement Addenda.

1. Alice Pit Diversion
2. Moose Ditch Diversion to Green Mountain Shaft
3. Green Mountain Shaft Sedimentation Basin
4. Upper (East) Missoula Gulch Channel
5. Upper (West) Missoula Gulch Channel
6. Centerville Channels to Syndicate Pit – (Upper Missoula Gulch Storm Water Channels)
7. Syndicate Pit Catch Basin 1 (CB-1)
8. Lower Missoula Gulch Splash Basin and Base Flow Diversion Structure
9. Lower Missoula Gulch Catch Basin 8 (CB-8)
10. Lower Missoula Gulch Catch Basin 9 (CB-9)
11. Lower Missoula Gulch Channel to Silver Bow Creek
12. Uptown Trail Catch Basin 2 (CB-2) - (Far West Drainage, south of Montana Tech football fields) - Uptown Trail
13. Uptown Trail Channel
14. Little Minah Channel
15. Buffalo Gulch Channel
16. Buffalo Gulch Detention Basin
17. Mountain Con Channel
18. Kelley Channel "A" to Berkeley Pit
19. Kelley Channel "B" to Kelley Catch Basin
20. Kelley Catch Basin at lower Anaconda Road
21. Kelley Catch Basins (2) north of Kelley Shaft
22. Parrot Channels (2 - North and South)
23. Belmont Diversion
24. Dexter Addition (Pipe)
25. Warren Ave. HD
26. Anaconda Road-Butte Brewery HD
27. Texas Ave. HD
28. Buffalo Gulch-Webster Garfield HD
29. Montana Street HD
30. Continental Drive Roadside Ditch
31. Kaw Avenue Storm Water Pipe

Appendix B

BRES Sites with Storm Water Infrastructure

BRES Site No.	BRES Site Name	Engineered SW Feature YES/NO	Engineered SW Feature Descriptions
155	Clark Mill Tailings	YES	Multiple RLDs, culvert inlets & outlets
4	Amy Dump	YES	RLDs, drop inlets & Bull Run Gulch
5	Alice Dump	YES	Multiple RLDs, & Bull Run Gulch
11	Magna Charta Lessee Dumps	YES	Multiple RLDs, culverts & Daly St. inlet
18	Walkerville Ballfield	YES	RLDs and Sub-Drain along North Street
20	Walkerville Playground	YES	RLDs on slope drainage, culvert inlets and outlets
25	Venus Dump	YES	RLD to catch basin and inlet along Walkerville Drive
29	Lexington Dump	YES	Multiple RLDs north, south, east and west, culvert inlets at B Street and outlet under Main St. (off site)
30	Atlantic-1	YES	Multiple RLDs north, south, east and west, culverts and sediment catch basin along Bernie's Way
32	Corra 2 Dump	YES	Multiple RLDs and culverts
32S	South Corra 2 Dump	YES	RLDs (2) along Bernie's' Way & Summer Street
33	Jennie Dell	YES	Ryan Road diversion berm
35	Del Monte	YES	RLD along 5th Street
36	La Platta Gulch	YES	Multiple RLDs and culverts & asphalt lined ditch and inlets on LaPlatta Street
37	Josephine Shaft	YES	Multiple RLDs and culverts
39	Rock Island Dump	YES	Multiple RLDs and culverts along Summer St. and Bernie's' Way
41	West Gray Rock	YES	Multiple RLDs and culverts along Summer St. and culverts under BA&P Walking Trail
42	Penrose	YES	Multiple RLDs and culverts under BA&P Walking Trail
45	Garfield	YES	RLD along 5th Street
46	Missoula Mine	YES	Culvert inlet and outlet under eastern access road
46E	Missoula Mine East	YES	LaPlatta Gulch outlet, sediment catch basin, Missoula Gulch inlet & outlet
51	Syndicate Pit	YES	Multiple RLDs
52	Moscow Dump	YES	RLD along N. Montana Street
53	Poulin Dump	YES	RLD and culvert on N. Montana St.
54	Spence Dump	YES	RLD and culvert on Buffalo St.
55	Kennedy Dump	YES	RLD and culvert on Buffalo St.
56	Buffalo Dump	YES	RLD on Buffalo St. & (2) SW inlets on Main St.
57	Little Mina-1	YES	RLD and inlet on Buffalo St.
58	Mountain Con-2 Dump	YES	RLD and culverts under trail (2)
59	Little Mina	YES	RLD and inlet along Buffalo St.
60	Mountain Con Mine Yard	YES	RLD (2)
60A	Mountain Con Mine Yard	YES	RLD to west

	Poly A		
60B	Mountain Con Mine Yard Poly B	YES	RLD to west
60C	Mountain Con Mine Yard Poly C	YES	RLD to west
60E	Mountain Con Mine Yard Poly E	YES	RLD with culvert inlets and outlets
60F	Mountain Con Mine Yard Poly F	YES	RLD
61N	Mountain Con-1 Dump North	YES	RLD on west
71	Anselmo Mineyard	YES	Multiple RLDs, catch basins and SW inlets
71N	Anselmo-Timber Yard Slope	YES	Multiple RLDs, catch basins (2), culvert inlets and outlets
75	National Dump	YES	RLD and inlet
77	PA020 Dump	YES	Asphalt SW Diversion Berm on Main St.
78	Original Mine Yard	YES	RLD along south fence-line and SW inlet
79	Late Acquisition	YES	
80	West Steward Parking Lot	YES	
81	Clear Grit Dump	YES	
82	Cellar Dirt Dump	YES	
83	Steward Mine Yard	YES	RLDs (2) to NE and to SE
84	Mandan Park Play Area	YES	RLD on N. Wyoming St.
94	Rialto Dump	YES	SW inlet on SE corner (across from Site)
96	Washoe Dump (Capri N.)	YES	RLDs (2) along west parking lot & south fence-line
97	Parrott Dump & Mine Yard	YES	Multiple RLDs on north and south
97S	Parrot Shop South Slope	YES	Multiple RLDs & inlets along Granite St.
97S2	Parrot Shop South Slope Poly 2	YES	RLD & inlet along Anaconda Road
97S3	Parrot Shop South Slope Poly 3	YES	RLD on south-east side
105	Lizzie Shaft	YES	Rock-lined berm along southern alley
115	Butte New England	YES	Multiple RLDs
116	Belmont Mine Yard	YES	Multiple RLDs
116N	Belmont Hoist	YES	RLD on Continental Drive & SE inlets (2)
117	Anderson Shaft	YES	RLD
117E	Anderson Shaft - East	YES	RLD
125	Child Harold-2 Dump	YES	Buried culvert from northern RR Sed. Basin. south to Second St.
127	Tension Dump	YES	RLD on east side
129	Heaney Dump	YES	RLD on east side and rock-lined SW inlet
134	Star West Dump	YES	RLD on N. and E.
148	Unnamed Dump	YES	RLD & 2 Rock Check-Dams

150	Colorado Smelter	YES	Multiple RLDs & Sed. Basins & SW inlet under I-15
154	Clark Mill Tailings NE	YES	Grove Creek Channel from Copper Mountain Park
155E	Clark Mill Tailings East	YES	RLD from Timber Butte
156	Timber Butte Mill	YES	Multiple RLDs
159	NW Syndicate Pit	YES	SW inlets (2) along N. Clark St. and Ballfield runoff ditch
160S	Syndicate Pit Dumps South	YES	RLD N. by Walking Trail & S. along Empire St.
161	Goldsmith Dumps	YES	RLDs and (2) sediment catch basins
174	Buffalo South	YES	Multiple RLDs, culvert inlets & outlets
175	Upper Missoula Gulch	YES	Multiple RLDs, culvert inlets & outlets, in addition to concrete lined main Missoula Gulch
177	North Alice Culvert	YES	Multiple RLDs, culvert inlets & outlets
177E	North Alice Culvert East	YES	RLD & culvert under haul road
177N	North Alice Culvert North	YES	RLD & culvert under road
181	Mountain Con-3	YES	Multiple RLDs, culvert inlets & outlets
1503	Hornet Addition	YES	RLD along Alabama St.
1542	Hesperus (Mercury St) (New-Mahoney)	YES	RLD & inlet
1625	Black Bird	YES	RLD from CB02
1796	Kaw at Casey	YES	RLDs & RLD drain along toe of RR slope
2000	BA&P Trail-MT Tech to Rocker	YES	Multiple RLDs & drop inlets & culverts under Trail
2330	BA&P Trail Section A	YES	Multiple RLDs & drop inlets & culverts under Trail
2340	BA&P Trail Section B	YES	Multiple RLDs & drop inlets & culverts under Trail
2350	BA&P Trail Section C	YES	Multiple RLDs & drop inlets & culverts under Trail
2360	BA&P Trail Section D	YES	Multiple RLDs & drop inlets & culverts under Trail
2370	BA&P Trail Section E	YES	Multiple RLDs & drop inlets & culverts under Trail
2380	BA&P Trail Section F	YES	Multiple RLDs & drop inlets & culverts under Trail
2390	BA&P Trail Section G	YES	Multiple RLDs & drop inlets & culverts under Trail

Appendix C

GIS Naming Key

GIS Naming Key

Subwatershed drainage areas (subbasins) were used to classify storm water infrastructure for the Butte Priority Soils Operable Unit (BPSOU). The original BSB storm water map provided subbasin data for the primary drainages within the BPSOU, but corrections were made to these subbasins based on field assessment and topographic map analysis. The following sub-basins have been defined for the Butte Area:

- Anaconda Road/Butte Brewery (AB)
- Buffalo Gulch (BG)
- Grove Gulch (GG)
- Idaho Street (IS)
- Missoula Gulch (MG)
- Montana Street (MS)
- Silver Bow Creek (SB)
- Warren Avenue (WA)
- West Side (WS)

Identification is by common name as available for the structures listed in Appendix A. Additionally, a three-part alphanumeric code will accompany the common name, consistent with the GIS naming system developed for BSB's *Municipal Storm Water Improvements Plan* (March 2009). All other structures are given a unique alphanumeric code consisting of 1) a location code (e.g. the drainage basin), 2) a structure code (PND = Pond), and 3) an "S" (indicating SSWS) followed by a sequential ID number. For example, a SSWS pond in the Buffalo Gulch drainage would be labeled BG-PND-SXXXX, with XXXX being the next available four-digit ID number. The following structure codes are utilized:

- PND = Pond
- D = Drainage Ditches and Biofiltration Swales
- I = Inlet
- M = Manhole
- C = Combination Manhole and Inlet
- O = Outfall
- HD = Hydrodynamic Device
- PVC, CMP, etc. = type of pipe material

Several components of the SSWS network will not be named. These components include energy dissipaters, trash racks, fences, gates and water quality signs. These will be inspected and maintained under the associated SSWS.

Appendix D

Superfund Structure Ownership Information and Notification Requirements

NOTE: Specific forms have been developed for the following structures. Ownership concerns such as notification, private property, or specific protective equipment will be included on the detailed form. The information included in Table D-1 is the overlap of the structures as provided on Exhibit 2 of the BSB/AR Allocation Agreement and the Cadastral ownership layer.

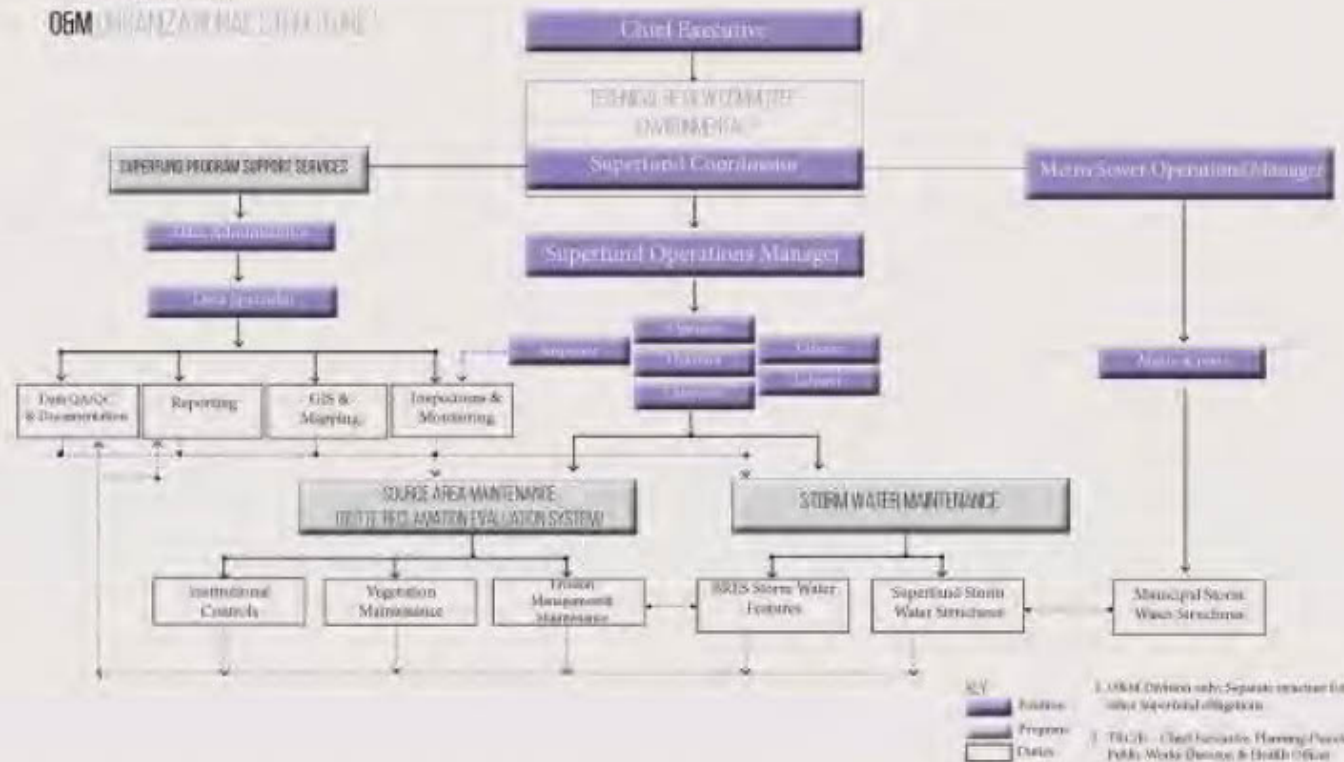
Table D-1. Superfund Storm Water Structure Ownership

SSWS GIS ID	Superfund Storm Water Structure Common Name	Ownership
MG-D-S0001	Alice Pit Diversion	ARCO, Cheryl Nancy Ann Gordon, Barry Browne, Ferry Lane Limited
AB-D-S0001	Moose Ditch Diversion to Green Mountain Shaft	ARCO, Barry Browne
AB-PND-S0001	Green Mountain Shaft Sedimentation Basin	ARCO
MG-D-S0002	Upper (East) Missoula Gulch Channel	BSB, Ferry Lane Limited, ARCO, two unlisted private
MG-D-S0003	Upper (West) Missoula Gulch Channel	BSB, Ferry Lane Limited, ARCO, two unlisted private
MG-D-S0004	Centerville Channels to Syndicate Pit – (Upper Missoula Gulch Storm Water Channels)	Same as above
MG-PND-S0001	Syndicate Pit Catch Basin 1 (CB-1)	BSB
MG-PND-S0002	Lower Missoula Gulch Splash Basin and Base Flow Diversion Structure	ARCO
WS-PND-S0001	Lower Missoula Gulch Catch Basin 8 (CB-8)	ARCO
WS-PND-S0002	Lower Missoula Gulch Catch Basin 9 (CB-9)	ARCO
WS-D-S0001	Lower Missoula Gulch Channel to Silver Bow Creek	ARCO
WS-PND-S0003	Uptown Trail Catch Basin 2 (CB-2) - (Far West Drainage, south of Montana Tech football fields) - Uptown Trail	BSB, Montana Tech
WS-D-S0002	Uptown Trail Channel	BSB, Montana Tech
AB-D-S0002	Little Minah Channel	BSB
BG-D-S0001	Buffalo Gulch Channel	ARCO, BSB, CPLT, Robert Day

BG-PND-S0001	Buffalo Gulch Detention Basin	BSB
AB-D-S0003	Mountain Con Channel	ARCO, BSB
AB-D-S0004	Kelley Channel "A" to Berkeley Pit	ARCO, BSB
AB-D-S0005	Kelley Channel "B" to Kelley Catch Basin	ARCO, BSB
AB-PND-S0002	Kelley Catch Basin at lower Anaconda Road	BSB, ARCO, Paul Rajacich
AB-PND-S0003 AB-PND-S0004	Kelley Catch Basins (2) north of Kelley Shaft	ARCO
AB-D-S0006 AB-D-S0007	Parrot Channels (2 - North and South)	BSB, Montana Resources, ARCO, one unlisted private
WA-D-0001	Belmont Diversion	ARCO, Public Housing Authority, Christie Transfer and Storage, Robert Chamberlin, Montana Resources, Burlington Northern, Bill LaHood, Central Education Foundation, Daniel Burns & Mary Folio, Irme Ratatics, John & Marie Cashell, one unlisted private
WS-D-S0003	Dexter Addition Pipe	ARCO, BSB
WA-HD-S0001	Warren Ave. Hydrodynamic Device	BSB
AB-HD-S0001	Anaconda Road-Butte Brewery Hydrodynamic Device	BSB
SB-HD-S0001	Texas Ave. Hydrodynamic Device	BSB
BG-HD-S0001	Buffalo Gulch-Webster Garfield Hydrodynamic Device	BSB
MS-HD-S0001	Montana Street Hydrodynamic Device	BSB
Need to assign	Kaw Avenue Storm Water Pipe	BNSF
Need to assign	Continental Drive Storm Water Pipe	BNSF

Appendix E

BSB Superfund Division O&M Organizational Structure



Appendix F

Superfund Storm Water Structure O&M Procedure Summary

Table F-1. O&M Procedures for Detention Ponds

Detention Pond				
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
<i>Spring and Fall</i> As soon as practicable after a storm event(s) equaling or exceeding 0.5-inches in 24-hours	General	Trash and Debris	Any trash and debris which exceed 5 cubic feet per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size garbage can). In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Trash and debris cleared from site.
		Poisonous Vegetation and noxious weeds	Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted BSB policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with BSB Weed Management department) Complete eradication of noxious weeds may not be possible. Compliance with State or BSB eradication policies required.
		Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants in quantities greater than a surface sheen (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present.
		Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired. (Coordinate with BSB Maintenance and Operations department; coordinate with Dam Safety Office if pond exceeds 10 acre-feet.)
		Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies)
		Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site. Apply insecticides in compliance with adopted BSB Maintenance and Operations policies.
		Tree Growth and Hazard Trees	Tree growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove. If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements)	Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., for firewood). Remove hazard trees.
	Side Slopes of Pond	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.

Table F-1 continued. O&M Procedures for Detention Ponds

<i>Spring and Fall</i> As soon as practicable after a storm event(s) equaling or exceeding 0.5-inches in 24-hours	Storage Area	Sediment	Accumulated sediment that affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.
		Liner (If Applicable)	Liner is visible and has more than three 1/4-inch holes in it due to seam separation, punctures, or tears.	Liner repaired or replaced. Liner is fully covered.
	Pond Berms (Dikes)	Settlements	Any part of berm which has settled 4 inches lower than the design elevation. If settlement is apparent, measure berm to determine amount of settlement. Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.	Dike is built back to the design elevation.
		Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
	Emergency Overflow/ Spillway and Berms Over 4 Feet in Height.	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping. Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.	Trees should be removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
		Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
	Emergency Overflow/ Spillway	Rock Missing	Less than 12" of riprap exists above native soil in area five square feet or larger, or any exposure of native soil at the top of outflow path of spillway. (Rip-rap on inside slopes need not be replaced.)	Rocks and pad depth are restored to design standards.
		Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.

Table F-2. O&M Procedures for Drainage Ditches

Drainage Ditches				
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Spring and Fall As soon as practicable after a storm event(s) equaling or exceeding 0.5-inches in 24-hours	General	Sediment Accumulation	Remove sediment accumulations greater than 6-inches or that significantly reduce the designed or historical hydraulic capacity.	Sediment cleaned out to designed ditch shape and depth; ditch reseeded if necessary to control erosion.
		Trash and Debris	Any trash and debris which exceed 5 cubic feet per 1,000 square feet (this is about equal to the amount of trash it would take to fill up one standard size garbage can). In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Trash and debris cleared from site.
		Poisonous Vegetation and noxious weeds	Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted BSB policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with BSB Weed Management department) Complete eradication of noxious weeds may not be possible. Compliance with State or BSB eradication policies required.
		Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants in quantities greater than a surface sheen (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present.
		Tree Growth and Hazard Trees	Tree and shrub growth within the ditch channel should be removed in order to maintain flow during a storm event.	Vegetation growth does not hinder flow during a storm event.
		Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If discharge pipes are causing erosion, a spreader may be warranted.
		Concrete deterioration	Spalling or cracked concrete may be a sign of concrete in need of replacement. Assess if concrete should be replaced.	Concrete ditch conveys water during storm events with minimal obstruction. Note condition of concrete and replace as necessary.
		Rip Rap voids	Scour marks and erosion near rip rap are an indication that rock depth is inadequate or rock diameter is undersized.	Rocks are restored to design standard to eliminate soil erosion.

Table F-3. O&M Procedures for Biofiltration Swales

Biofiltration Swales				
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Spring and Fall As soon as practicable after a storm event(s) equaling or exceeding 0.5-inches in 24-hours	General	Sediment Accumulation	Use a rake and shovel to remove, by hand, sediment accumulations greater than 2-inches thick that cover grass areas; avoid vegetation removal. Removed sediments must be transported to an EPA-approved repository for disposal.	Sediment cleaned out to designed swale shape and depth; swale reseeded if necessary to control erosion.
		Trash and Debris	Clear leaves, litter, and sediment. Oily materials, and grass cuttings when debris is observed and can cause blockage of inlets, outlets, curb cuts, or level spreaders. Use a rake and shovel to remove sediment from the base of the swale when greater than two-inches thick to preserve vegetation.	Trash and debris cleared from site. Swale can function to treat water quality storm event.
		Vegetation growth / lack of growth	When grass height is greater than nine (9) inches, mow and collect clippings. If trees or shrubs are growing in the swale remove appropriately. If vegetation has been denuded, use appropriate BMPs such as hydroseeding or mulches to cover bare soils.	Biofiltration swale is covered with a plant variety that allows for the retention / detention of the water quality event and does not interfere with inlet / outlet / or level spreader function.
		Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.
		Level spreader not in working order	Level spreader may be damaged, sunken, bypassed by erosion, or in need of other repair.	Level spreader is effective at preventing downgradient erosion from the swale.

Table F-4. O&M Procedures for Trash Racks

	Trash Rack			
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Spring and Fall Additional inspections <u>may</u> be necessary after a storm event(s)	General	Trash and Debris	Any trash and debris should be removed from the bars or racks.	Trash and debris cleared from site.
		Bars or Racks damaged or missing	Trash, debris and sediment may not be detained if the bars or racks are damaged or missing.	Repair bars and racks. Replace as necessary.

Table F-5. O&M Procedures for Conveyance Pipes and Culverts

	Conveyance Pipes and Culverts			
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Annually for culverts associated with a ditch. As needed upon manhole / inlet / catch basin inspection.	General	Sediment	The JetVac truck shall be used to remove sediment once sediment accumulation is greater than 20% of the conveyance pipe diameter.	Sediment does not hinder flow during a storm event.
		Roots	Use the mechanic cutter or remove vegetation from the surface if roots are present.	Vegetation growth does not hinder flow during a storm event.

Table F-6. O&M Procedures for Inlets, Catch Basins, Sediment Traps, and Manholes

	Inlets, Catch Basins, and Manholes			
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Per BSB O&M schedule and as time allows	General	Sediment Accumulation	Clean inlets to prevent captured materials from being transported into conveyance pipes or to downstream waters. Clean catch basins and sediment traps when they become one third full to maintain sediment-trapping capacities. Clean manholes where sediments, debris, or trash have accumulated or blockages prevent storm water from freely flowing into the downstream conveyance pipe.	Maintains or restores infrastructure function.
		Trash and Debris	Any trash, sediment and/or debris which plugs the grated lid or plugs the invert on inlet and outlet piping decreases the efficiency of the storm sewer network. Any evidence of oil, gasoline, contaminants or other pollutants (sanitary) should be noted and investigated.	Remove sediment and trash from the grated cover. Use the JetVac truck to remove sediment or debris from the catch basin sump or pipe inverts.
		Lid / Cover is cracked or structurally damaged.	A cracked or damaged lid may cause a safety concern for vehicle traffic or for capturing storm water. An ill-fitting lid may also pose a safety concern and warrants replacement.	Replace lid or cover as needed.
		Pipe inverts plugged more than 30%	Use the JetVac truck to clean the manhole and piping inverts.	Minimal sediment present and inverts clear for storm water conveyance.
		Manhole rungs, ingress / egress obstruction, manhole covers secure	Loose or damaged manhole rungs or vehicular or personnel concerns for ingress / egress should be addressed in the diversion structure and manhole. I	Replace missing manhole rungs and remove obstructions to ingress / egress ports.
		Vertical Structure Damaged	Concrete cracks, spalling, or voids; Bricks loose and falling into the sump, and loose rungs pose a safety concern for personnel entry and for potential pipe blockages. Severe conditions should be repaired or the vertical structure should be replaced.	Vertical structure material is intact.

Table F-7. O&M Procedures for Energy Dissipaters

Energy Dissipaters				
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Spring and Fall As soon as practicable after a storm event(s)	General	Accumulated Sediment, debris or trash	Any trash, sediment and/or debris has the potential impact to surface water as carried in a storm event. Any evidence of oily residues should be noted and investigated.	Trash and debris cleared from site.
		Rocks missing; scour or erosion present	Replace rocks as needed. If scour or erosion present and rocks are not held in place; rock diameter may be too small. Contact an engineering firm to calculate predicted velocity from outlet and replace rock structure.	Rocks cover the outlet to reduce or eliminate sediment erosion and to reduce velocity.
		Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.

Table F-8. O&M Procedures for Hydrodynamic Devices (HDDs)

Hydrodynamic Devices				
Inspection Frequency	Drainage System Feature	Potential Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed or Not Needed
Spring and Fall Frequency may be increased or decreased based on sediment loading	General	Manhole rungs, ingress / egress obstruction, manhole covers secure	Loose manhole rungs or vehicular or personnel concerns for ingress / egress should be addressed in the diversion structure and manhole. Ingress / egress covers are labeled with CONTECH and should seat securely into rings.	Replace missing manhole rungs and remove obstructions to the HDD or ingress / egress ports.
		Concrete spalling, cracked or joint failure.	Leaks into the concrete from joints or failed concrete should be repaired. Spalling concrete should be noted and repaired as large crack, missing sections or rebar is visible.	Precast concrete structure should be in good working order with minimal surface features (cracks, spalled concrete, or leaks at joints).
		Corrosion of separation screen or fiberglass separation cylinder	Corrosion on the separation screen or fiberglass separation cylinder should be monitored.	None to minimal corrosion present.
		Surface oil / grease	Any evidence of oil, gasoline, contaminants or other pollutants in quantities greater than a surface sheen (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present.
		Trash / sediment / debris	Measure the depth to the accumulated sediment from the manhole ring. If sediment accumulation is greater or equal to 75% of the sump capacity, the sump must be cleaned. The inspector should compare the measured depth to the stamped cleanout depth to determine if the sediment accumulations have filled 75% of the sump capacity.	Sediment less than 75% of the sump capacity of the manhole.
		Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.

Appendix G

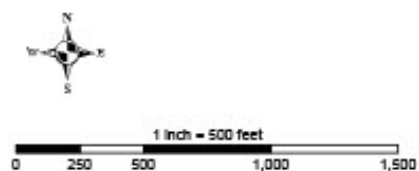
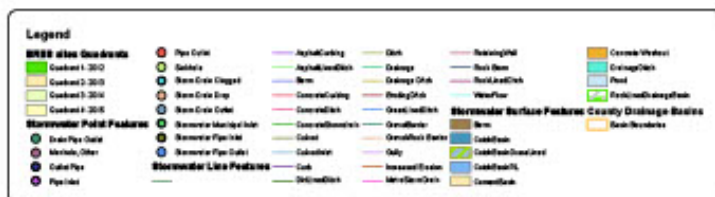
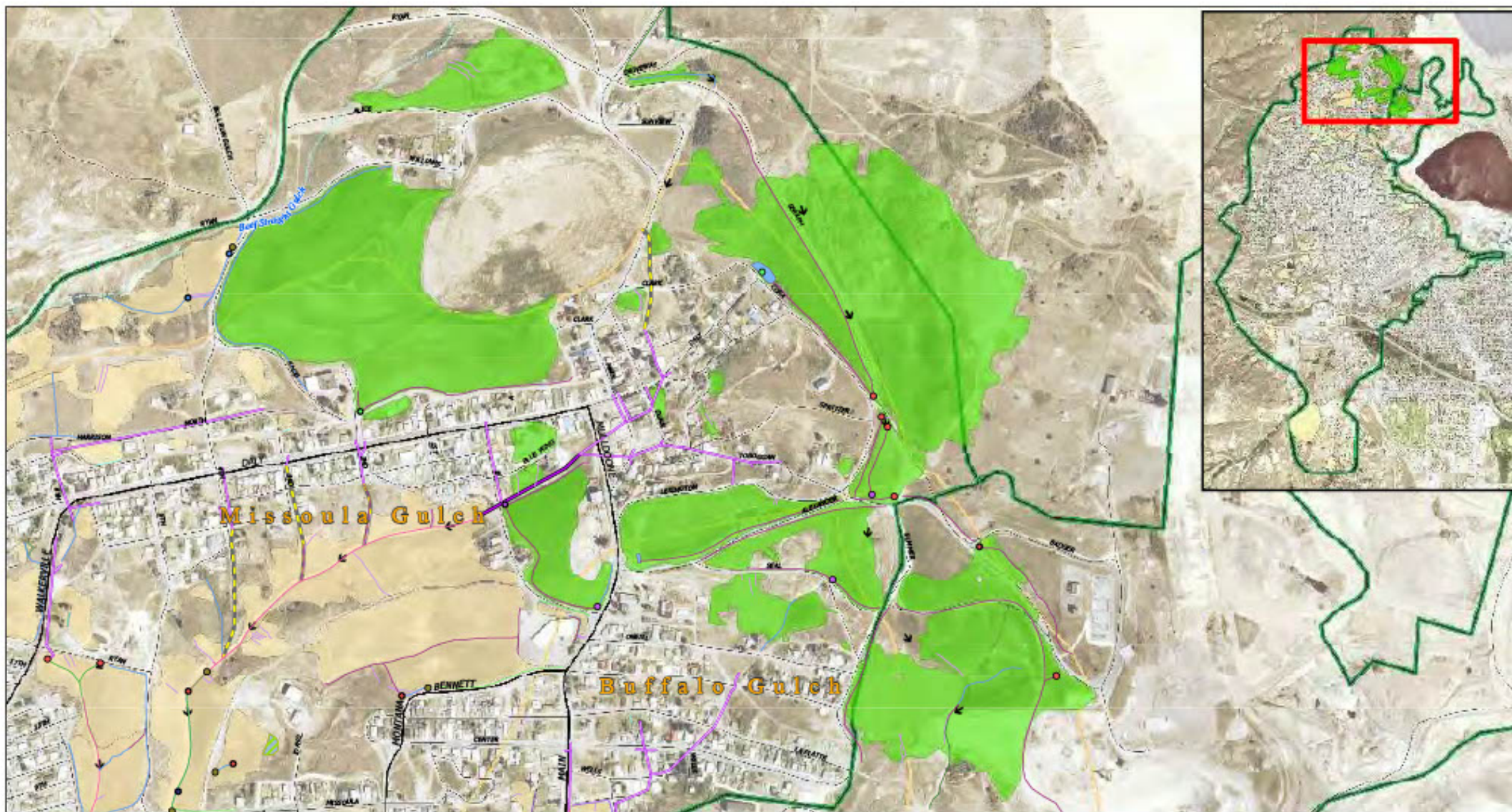
Site Inspection Forms (Separate Binder)

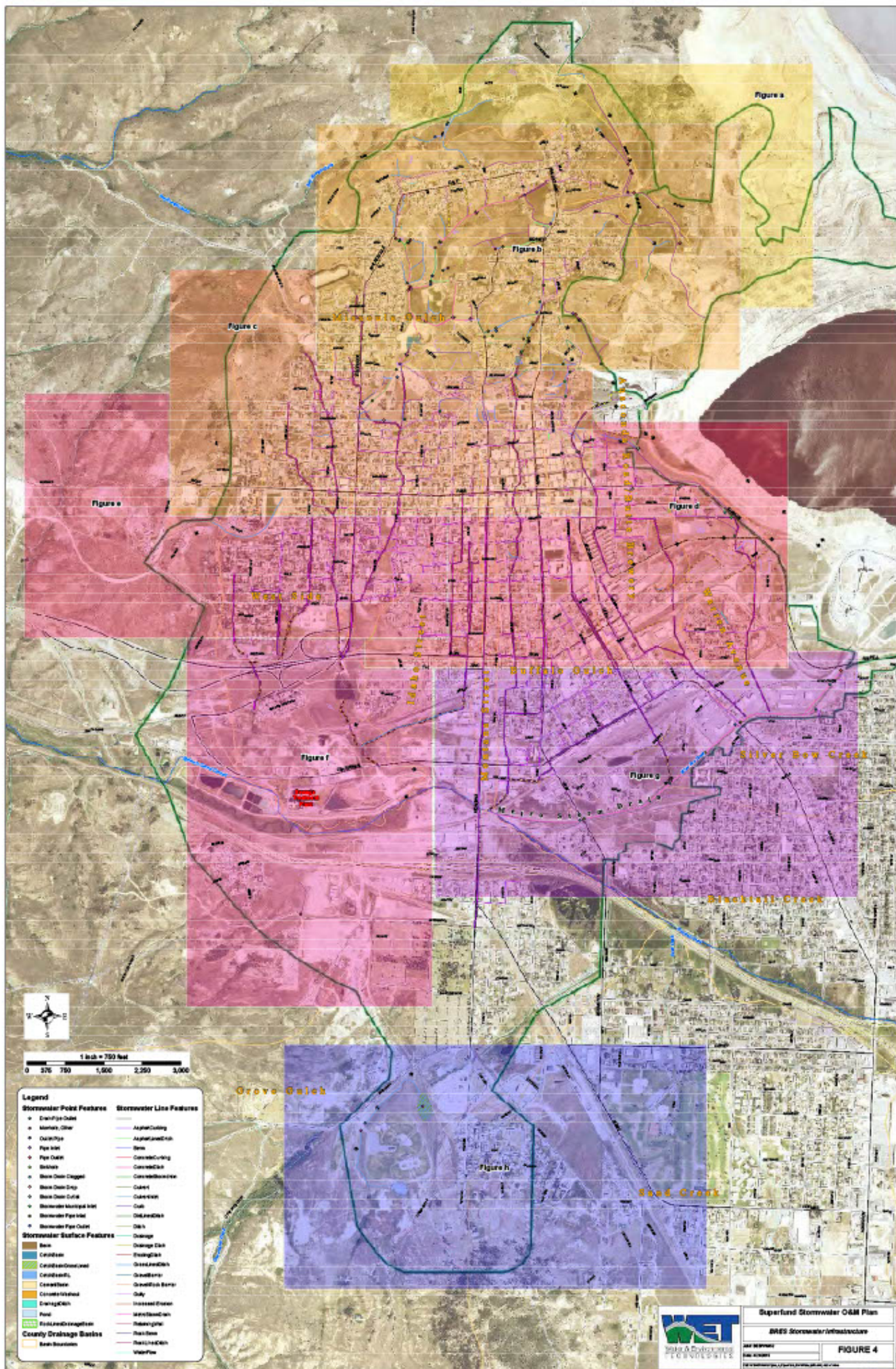
Figures

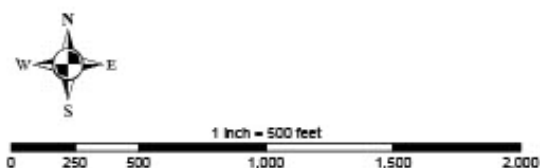


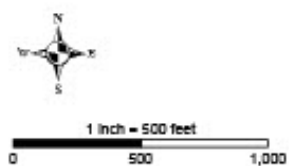


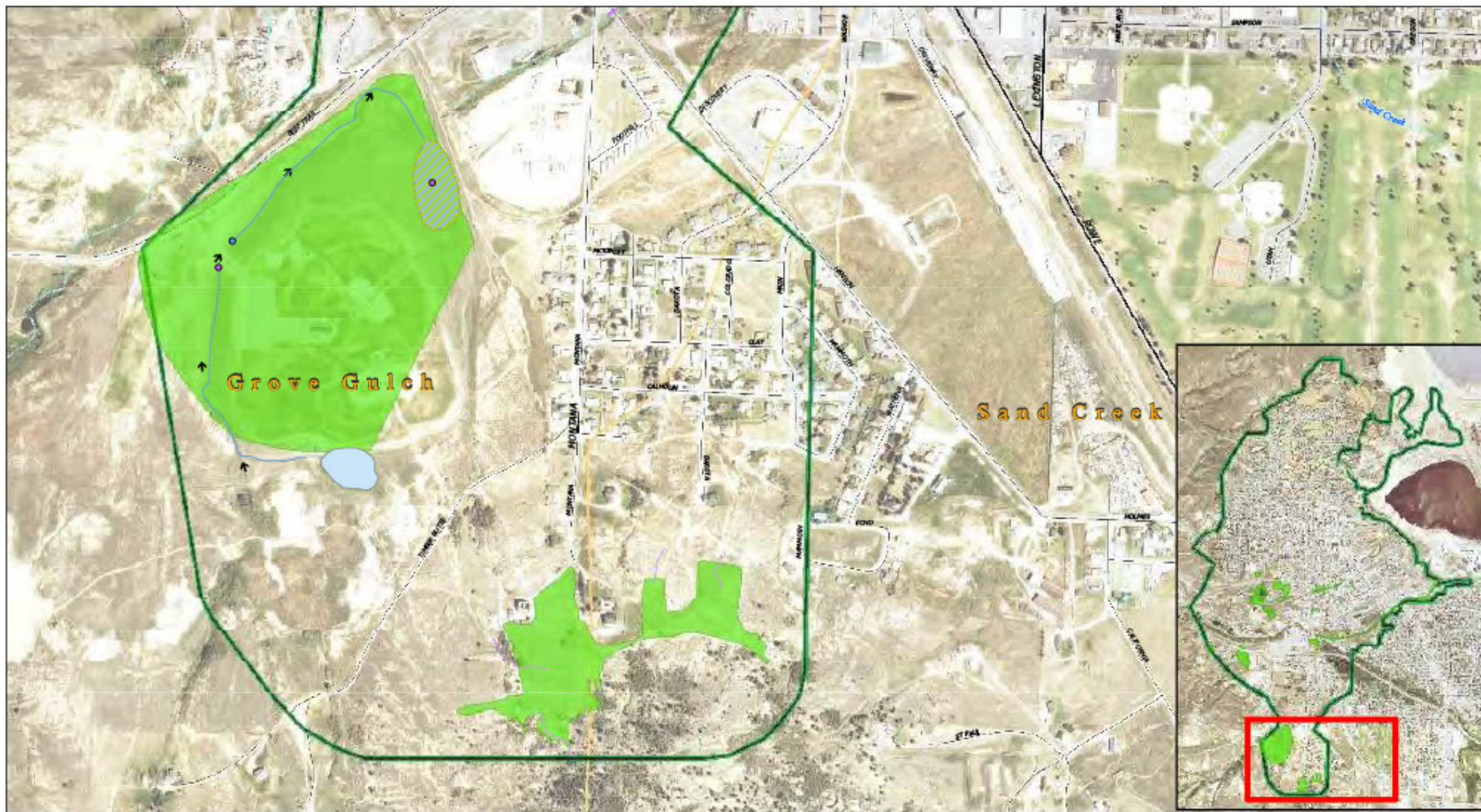












Legend

BRES sites Quadrants	Stormwater Line Features	Stormwater Surface Features	County Drainage Basins
Quadrant 1, 2012	Pipe Inlet	Collection	Redwood Drainage Basin
Quadrant 2, 2013	Pipe Outlet	Curb	County Drainage Basins
Quadrant 3, 2014	Box Culvert	Drainage	San Joaquin
Quadrant 4, 2015	Storm Drain Channel	Drainage Ditch	
Stormwater Point Features	Storm Drain Catchment	Drainage Ditch	
Drain Pipe Inlet	Storm Drain Catchment	Drainage Ditch	
Manhole, Other	Storm Drain Catchment	Drainage Ditch	
Drain Pipe	Storm Drain Catchment	Drainage Ditch	



1 inch = 500 feet
0 500 1,000



Superfund Stormwater O&M Plan

BRES Stormwater Infrastructure
Quadrant 4a (south)

DATE: 8/27/2015
BY: JG/MSH

FIGURE 4h