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### **Butte Priority Soils Operable Unit (BPSOU) Unreclaimed Sites - Draft Final Field Sampling Plan (FSP) #2; Unreclaimed Sites UR-24, UR-26, and UR-40. Butte Priority Soils Operable Unit (BPSOU)**

Mike McAnulty

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**June 30, 2021**

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**Butte Priority Soils Operable Unit (BPSOU) Unreclaimed Sites - Draft Final Field Sampling Plan (FSP) #2; Unreclaimed Sites UR-24, UR-26, and UR-40. Butte Priority Soils Operable Unit (BPSOU)**

Dear Agency Representatives:

As described in Appendix D, Attachment C to the 2020 Consent Decree, areas listed as Unreclaimed Solid Media Sites within Butte Priority Soils Operable Unit (BPSOU) may have potentially been impacted by historic mining and therefore may pose a threat to human health, contribute metals-impacted sediments to existing or planned wet weather control features, or contribute to the degradation of surface water quality. There are a total of 39 unclaimed sites, multiple sites will be organized in a package for approval. Field sampling plan (FSP) package #2 (FSP Package #2) includes Unreclaimed (UR) Sites UR-24, UR-26, and UR-40. Site evaluations will be performed using means and methods provided in the Atlantic Richfield Company Final UR Quality Assurance Project Plan (QAPP) published October 12, 2018, which was prepared in accordance with U.S. Environmental Protection Agency (EPA) guidance documents EPA QA/R-5 and EPA QA/G-5 for QAPP development. The QAPP was updated in 2021 (and is referred to herein as UR Sites QAPP) as a component of the BPSOU Solid Media Management Project Plan. Results from site evaluations will be used to prepare site declarations and assist with determination of site remediation requirements. Site evaluations will begin in 2021 and are anticipated to be completed in 2022, or as site access allows. Site declarations for sites sampled in 2021 are anticipated to be provided for Agency review and approval by the end of 2021. Declarations of sites sampled after 2021 will be provided as soon as feasible. Remedial action will be performed following Agency approval of pertinent site-specific remedial action work plans.



A preliminary list of FSP packages, provided below, will be updated to record the status and progress related to FSP package submittals.

Package	Sites	Submittal Date	Approval Date
1	UR-31, 32, and 39	May 19, 2021	June 8, 2021
2	UR-24, 26, and 40	June 30, 2021	TBD
3	UR-06, 07, 20, 22, 35, and 36	TBD	TBD
4	UR-16 and 21	TBD	TBD
5	UR-12, 13, 33, and 38	TBD	TBD
6	UR-05, 27, 28, 29, 30, and 34	TBD	TBD
7	UR-01, 02, 03, 04, 15, and 17	TBD	TBD

The crosswalk list provided below references where pertinent field sample collection and documentation elements are discussed.

Element	Reference Location	
	FSP	UR Sites QAPP
Title page and approval authority.		Page i
Introduction and appropriate Agency-approved UR-Sites QAPP reference.	X	
Goals and objectives of sampling.		Section 2.4, 3.2
Proposed schedule for field work.	X	
Site figure including sampling locations, number and depth of samples to be collected, and sample field identification.	X	Section 3.2.1
Field activity methods and procedures, standard operating procedures.		Section 3.2, Table 4
Sample labeling and shipping.		Section 3.2.5, Appendix C
Sample analysis, specifying X-ray fluorescence (XRF) vs. laboratory analysis and laboratory name.		Section 3.3
Figure showing the site and/or area represented by a sample, sample ID, and aliquot locations for composite samples.	X	

Soil sampling is proposed for FSP Package #2 at 3 UR Sites located in the south area of Butte, Montana, near the Copper Mountain Recreation Complex and Beef Trail. The results of the soil sampling will be used to support the site declaration and potential future remediation requirements for each site. This FSP is consistent with Section 3.0 Data Acquisition protocol described in the UR Sites QAPP. The UR Sites 24 and 26 are each less than 1.0 acre, UR-40 is 3.2 acres. UR-24 is located outside the complex fence, however debris protruding the ground presents hazards to children playing. UR-26 is a vacant lot with exposure potential to nearby residents. UR-40 is a vacant lot outside the fence of the complex that contains trails and residences nearby. Each of the sites is

discussed separately below. The attachments at the end of this document include figures for each site showing the proposed soil sampling locations.

## **Site: UR-24 Clark Mill and Adjacent Mill Tailings**

### **Background**

Site UR-24 is approximately 0.7 acres. It is located within the Copper Mountain Recreation Park on Beef Trail Road (Figure 1). The site is part of an east-facing slope along an unnamed drainage west of the football fields and east of the driving range. The site has both areas with moderate vegetation and some significant bare areas. Many of the bare areas appear to have exposed mine waste. There is also metal debris and other garbage protruding through the ground within UR-24. This is the result of improperly covered garbage in the closed former Butte-Silver Bow landfill. Rilling has developed in some of the bare areas with fine-grained soils.

Site UR-24 is owned by Butte-Silver Bow. The nearest residence is about 1,300 feet south of Site UR-24 and higher in the drainage. There is fencing around the Copper Mountain Recreation Park but there is no fencing specifically around Site UR-24. Site UR-24 is in the Grove Gulch drainage basin of BPSOU.

### **Previous Sampling Efforts**

There is no record of previous soil sampling at this site or in the vicinity of UR-24.

## **Site: UR-26 Grove Creek from Hanson to Rowe Rd**

### **Background**

Site UR-26 is estimated at 0.37 acres. It is located just east of the intersection of South Montana Street, Beef Trail Road, and Hanson Road. From there, Site UR-26 trends northeasterly toward Rowe Road (Figure 2). Access to UR-26 is from Hanson Road or possibly from South Dakota Street.

The majority of Site UR-26 is owned by Kenneth and Margie Reap. A small portion of the site is owned by Butte-Silver Bow. Site UR-26 is vacant land that occupies the north bank of Grove Creek in a mostly residential part of Butte. The site has two piles of soil located in the northwest section; good grass cover has established along the walking path down the middle of the site that runs east-west. Site UR-26 is in the Grove Gulch drainage basin of BPSOU and runoff from the site flows immediately into Grove Creek.

### **Previous Sampling Efforts**

Soil samples have been collected in the past at Site UR-26. Data obtained from the Geocortex web-based database at <https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU> contains the records for six previous soil samples at or near Site UR-26. Approximate sample locations for the six

samples are included on Figure 2 with results provided in Table 1 below. Some of the samples listed show exceedances of BPSOU action levels for arsenic, lead, and zinc. The BPSOU action levels are listed in Tables 1 and 2 of the UR Sites QAPP.

**Table 1: Previous Sampling Results from BPSOU Soil Sampling  
(units are milligrams per kilograms)**

	Station ID	
	SO-GG-E	SO-GG-F
COC		
Arsenic	16	26
Cadmium	<4	<4
Copper	72 J	90 J
Lead	58	91
Zinc	200	574
Sample Date	11/3/97	11/3/97

COC: contaminants of concern.

## Site: UR-40 East Clark Mill Tailings

### Background

Site UR-40 (Source Area No. 155E) is approximately 3.2 acres located near east of the Copper Mountain Recreation Park. The site can be accessed from either South Montana Street or Beef Trail Road (Figure 3). The northern two-thirds of Site UR-40 consist of an abandoned railroad grade and the land surrounding it. The southern lobe of the site is near the bottom of a long, north-draining slope with the former Clark Mill at the top of the slope. Site UR-40 is owned by Butte-Silver Bow and is bounded on the north by a trucking firm and on the southeast by a residential neighborhood along South Montana Street. The nearest residence is about 100 feet due east of the east portion of Site UR-40. Parcels to the north and southeast of Site UR-40 are fenced, but there is not fencing that restricts access to UR-40. The fence along the east side of Copper Mountain Park does prevent direct access to UR-40 from the park.

The site has areas with both moderate vegetation and some significant bare areas. Some of the bare areas have white salts and black-stained gravel, which may be impacts from mine waste. Rillings has developed in some of the bare areas with fine-grained soils. Site UR-40 is in the Grove Gulch drainage basin.

### Previous Sampling Efforts

Data obtained from the Geocortex web-based database at <https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU> contains the records for three previous soil sample locations at or near Site UR-40. Approximate sample locations are included on Figure 3 with results provided in Table 2 below. Two of these samples were from studies of former and current railroad beds within BPSOU. Some of the samples listed show exceedances of BPSOU action levels for arsenic and zinc. The BPSOU action levels are listed in Tables 1 and 2 of the UR Sites QAPP).

**Table 2: Previous Sampling Results from BPSOU Soil Sampling  
(units are milligrams per kilograms)**

COC	Sample Station ID				
	MTW010-00	RRNB012	FSUA-104	Clark8-uv (unvegetated)	Clark8-v (vegetated)
Arsenic	188	16	404	628	142
Cadmium	4	NA	NA	4.9	<3.9
Copper	314 J	27	203	367	153
Lead	304	27	914	1,110	201
Zinc	1,030	100	2,000	1,800	658
Sample Date	5/16/91	6/10/93	12/14/95	Oct. 2005	Oct. 2005

COC: contaminant of concern. NA: not analyzed.

In October 2005, Atlantic Richfield conducted soil sampling in the area surrounding the Clark Tailings and compiled the results into the *Final Source Area Remedial Action Design Memorandum* in 2007. The 2005 sampling was mostly to the south of UR-40 but did overlap slightly. The south lobe of UR-40 coincides with Sub-area 8 of the 2005 sampling event. The results for the Sub-area 8 samples (Clark8-uv and Clark8-v) are in Table 3. The samples were composites and collected from a depth of 0-2 inches. The results for the Sub-area 8 samples do not exceed the BPSOU open space action levels for arsenic or lead, which is what they were being evaluated for at the time of that study. However, the results do exceed the storm water screening criteria for arsenic, lead, and zinc.

**Table 3: Previous Sampling Results from BPSOU Soil Sampling  
(units are milligrams per kilograms)**

COC	Sample Station ID	
	Clark8-uv (unvegetated)	Clark8-v (vegetated)
Arsenic	628	142
Cadmium	4.9	<3.9
Copper	367	153
Lead	1,110	201
Zinc	1,800	658
Sample Date	Oct. 2005	Oct. 2005

COC: contaminant of concern.

## Unreclaimed Sites QAPP

All field work and soil analysis will be completed in accordance with the UR Sites QAPP. The UR Sites QAPP will be reviewed annually and updated as needed on Agency review and approval. Soil sampling will be conducted at the 3 UR Sites at depth intervals of 6 to 12 inches, 2 to 6 inches, and 0 to 2 inches. Sampling will take place in that order from the deepest interval (6 to 12 inches) to the shallowest interval (0 to 2 inches). Proposed sample locations for each site are shown on Figures 1 through 3.

## Sampling Procedure

All sampling procedures are to be followed according to the UR Sites QAPP, which describes the activities necessary to conduct soil sampling and characterization activities on UR Sites within BPSOU. It also describes the quality assurance/quality control policies and procedures to be used during collection and analysis. Implementation of this fieldwork will likely commence in the spring of 2021, assuming that access has been obtained for all subject parcels.

If you have questions or comments, please do not hesitate to call me at (907) 355-3914.

Sincerely,



Mike Mc Anulty  
Liability Manager  
Remediation Management Services Company  
An affiliate of **Atlantic Richfield Company**

### Attachments:

Figure 1 Unreclaimed Site UR-24 Proposed Sample Locations  
Figure 2 Unreclaimed Site UR-26 Proposed Sample Locations  
Figure 3 Unreclaimed Site UR-40 Proposed Sample Locations

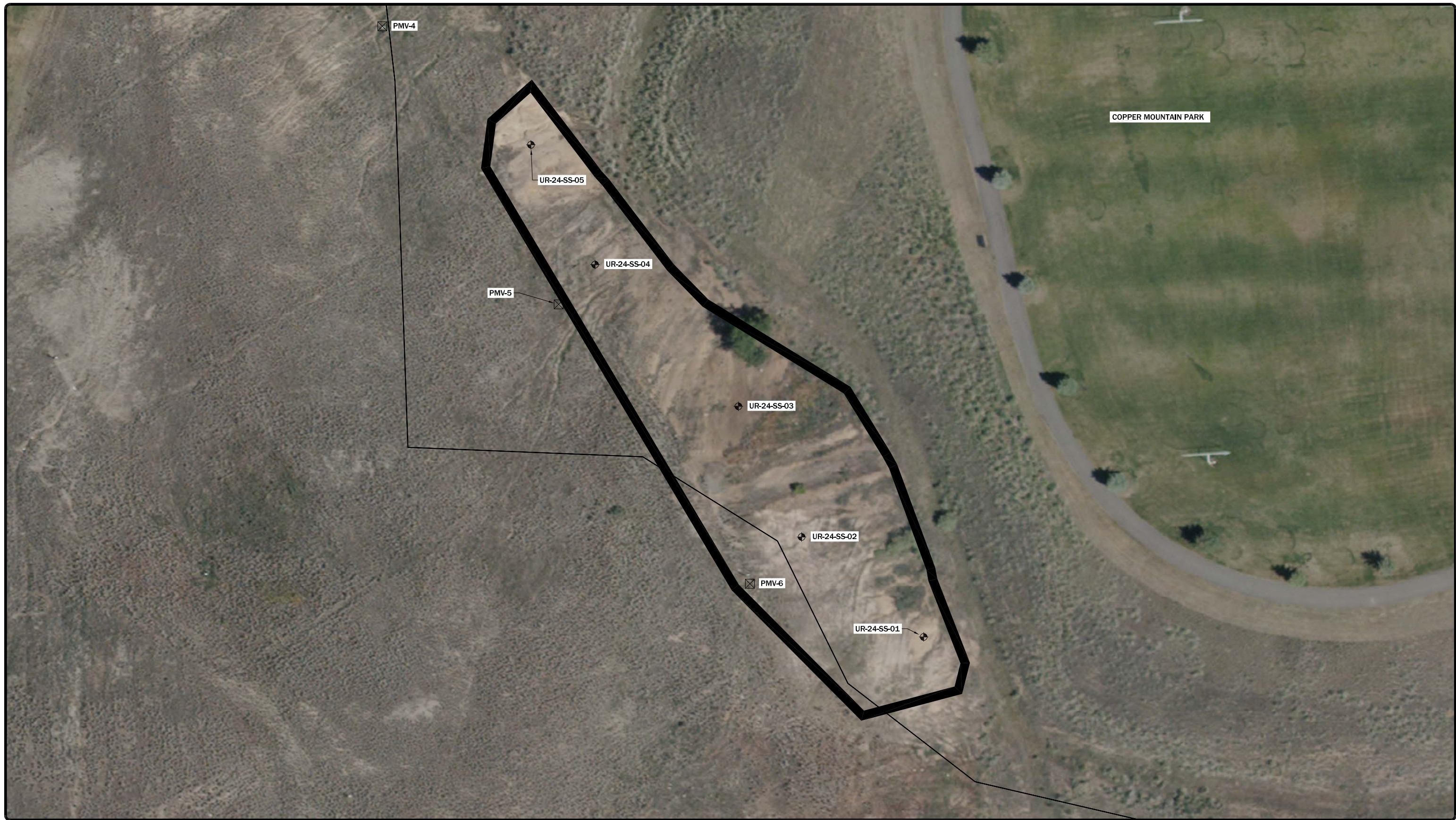
Cc: Patricia Gallery / Atlantic Richfield - email  
Chris Greco / Atlantic Richfield – email  
Mike Mc Anulty / Atlantic Richfield - email  
Loren Burmeister / Atlantic Richfield – email  
Dave Griffis / Atlantic Richfield - email  
Jean Martin / Atlantic Richfield - email  
Irene Montero / Atlantic Richfield - email  
David A. Gratson / CEAC / email  
Mave Gasaway / DGS - email  
John Davis / PRR - email  
Joe Vranka / EPA - email

David Shanight / CDM - email  
Curt Coover / CDM - email  
James Freeman / DOJ - email  
John Sither / DOJ - email  
Jenny Chambers / DEQ - email  
Dave Bowers / DEQ - email  
Carolina Balliew / DEQ - email  
Matthew Dorrington / DEQ - email  
Jim Ford / NRDP - email  
Ray Vinkey / NRDP - email  
Harley Harris / NRDP - email  
Katherine Hausrath / NRDP - email  
Meranda Flugge / NRDP - email  
Ted Duaine / MBMG - email  
Gary Icopini / MBMG - email  
Becky Summerville / MR - email  
Kristen Stevens / UP - email  
Robert Bylsma / UP - email  
John Gilmour / Kelley Drye - email  
Leo Berry / BNSF - email  
Robert Lowry / BNSF - email  
Brooke Kuhl / BNSF - email  
Jeremie Maehr / Kennedy Jenks - email  
Annika Silverman / Kennedy Jenks - email  
Matthew Mavrinac / RARUS - email  
Harrison Roughton / RARUS - email  
Brad Gordon / RARUS - email  
Mark Neary / BSB - email  
Eric Hassler / BSB - email  
Julia Crain / BSB - email  
Chad Anderson / BSB - email  
Brandon Warner / BSB – email  
Abigail Peltomaa / BSB - email  
Molly Maffei / BSB - email  
Gordon Hart / BSB – email  
Jeremy Grotbo / BSB – email  
Josh Vincent / WET - email  
Craig Deeney / TREC - email  
Scott Bradshaw / TREC - email  
Brad Archibald / Pioneer - email  
Pat Sampson / Pioneer - email  
Mike Borduin / Pioneer - email  
Joe McElroy / Pioneer – email  
Andy Dare / Pioneer – email  
Karen Helfrich / Pioneer - email  
Leesla Jonart / Pioneer - email



Connie Logan/ Pioneer – email  
Ian Magruder/ CTEC- email  
CTEC of Butte / email  
Scott Juskiewicz / Montana Tech – email

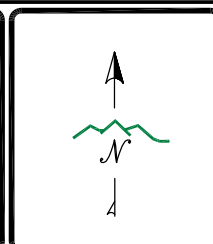
File: MiningSharePoint@bp.com - email  
BPSOU SharePoint - upload



**LEGEND:**

- PROPOSED SOIL SAMPLE LOCATION
- PASSIVE METHANE VENT (PMV) FOR CLOSED LANDFILL

UR-23 IS 0.7 ACRES



DISPLAYED AS:	_____
COORD SYS/ZONE:	MSP
DATUM:	NAD 83
UNITS:	FEET
SOURCE:	PIONEER

SCALE IN FEET

**FIGURE 1**

*TECHNICAL SERVICES, INC.*

1101 SOUTH MONTANA  
BUTTE, MONTANA 59701  
(406) 782-5177

**UNRECLAIMED SITE  
UR-24  
PROPOSED  
SAMPLE LOCATIONS**

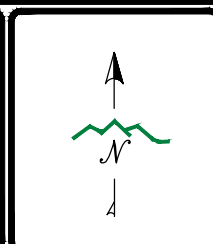
DATE: 10/2018



**LEGEND:**

-  PROPOSED SOIL SAMPLE LOCATION
-  PREVIOUS SOIL SAMPLE LOCATION

UR-26 IS 0.37 ACRES



DISPLAYED AS:	
COORD SYS/ZONE:	MSP
DATUM:	NAD 83
UNITS:	FEET
SOURCE:	PIONEER

SCALE IN FEET

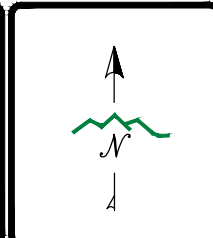
**FIGURE 2** UNRECLAIMED SITE  
UR-26  
PROPOSED  
SAMPLE LOCATIONS

**PIONEER**  
TECHNICAL SERVICES, INC.  
1101 SOUTH MONTANA  
BUTTE, MONTANA 59701  
(406) 782-5177

DATE: 5/2021



LEGEND:  
 ● PROPOSED SOIL SAMPLE LOCATION  
 ▲ PREVIOUS SOIL SAMPLE LOCATION  
 UR-14 IS 3.2 ACRES



DISPLAYED AS:  
 COORD SYS/ZONE: MSP  
 DATUM: NAD 83  
 UNITS: FEET  
 SOURCE: PIONEER

SCALE IN FEET  
 0 100 200

FIGURE 3 UNRECLAIMED SITE  
 UR40  
 PROPOSED  
 SAMPLE LOCATIONS

**PIONEER**  
 TECHNICAL SERVICES, INC.  
 1101 SOUTH MONTANA  
 BUTTE, MONTANA 59701  
 (406) 782-5177

DATE: 06/2021