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Butte Priority Soils Operable Unit (BPSOU) Final Insufficiently Reclaimed (IR) Sites Field Sampling Plan (FSP) BRES No. 17 – Paymaster

Mike McAnulty

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August 25, 2023

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RE: Butte Priority Soils Operable Unit (BPSOU) Final Insufficiently Reclaimed (IR) Sites Field Sampling Plan (FSP) BRES No. 17 – Paymaster

Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company to distribute the Butte Priority Soils Operable Unit (BPSOU) Final Insufficiently Reclaimed (IR) Sites – Field Sampling Plan (FSP) Butte Remediation Evaluation System (BRES) No. 17 – Paymaster.

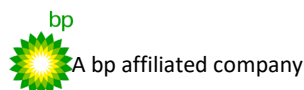
Agency comments received August 10, 2023, are addressed below and changes were made to the FSP to address these comments as appropriate. Note, accessible hyperlinks to the Agency-approved Final Quality Assurance Project Plans (QAPPs) are included within the text of the FSP.

Agency Comment:

1. *Previous Evaluation Findings.* In the third paragraph, please state if the private property to the east of the site has been previously sampled or sampled under the RMAP program. The current wording is somewhat ambiguous in this regard.

Atlantic Richfield Response: Confirmation with BSB indicated that the Residential Metals Abatement Program (RMAP) performed sampling on the private property east of the site. Based on sample results, RMAP performed remediation of the residential yard on the northern portion of the site and non-vegetated driveway areas. The referenced text has been revised for clarity.

2. *Please confirm the naming convention for samples collected under the Unreclaimed Sites QAPP as all proposed samples begin with a prefix "IR" including the samples being collected under the UR Sites QAPP. Please revise as appropriate.*



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Atlantic Richfield Response: The sample naming convention provided in the FSP follows Section 3.2.2 Sample Identification in the Agency-approved BPSOU 2023 *Final IR Areas Quality Assurance Project Plan (QAPP)*. As described in the FSP, sample stations located within the original site boundary will follow the Final IR QAPP. These stations are listed in the FSP as IR-17-SS01 and IR-17-SS02 and will include two depth intervals. The sample station located outside the original site boundary is listed in the FSP as IR-17-SS03 and will include three depth intervals per the Final UR QAPP.

Figure 1 illustrates the site sampling boundary and sample stations. Sample stations are color coded, and the appropriate QAPP is referenced in the figure legend to provide field personnel with a discernable visual reference. After discussion with the Agencies, this comment has been clarified and resolved.

If you have any questions or comments, please call me at (907) 355-3914.

Sincerely,

Mike McAnulty

Mike Mc Anulty

Liability Manager

Remediation Management Services Company

An affiliate of **Atlantic Richfield Company**

Cc: Chris Greco / Atlantic Richfield – email
Josh Bryson / Atlantic Richfield – email
Loren Burmeister / Atlantic Richfield – email
Dave Griffis / Atlantic Richfield – email
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Leo Berry / BNSF – email
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Lauren Knickrehm / BNSF – email
Doug Brannan / Kennedy Jenks – email
Matthew Mavrincac / RARUS – email
Harrison Roughton / RARUS – email
Brad Gordon / RARUS – email
Mark Neary / BSB – email
Eric Hassler / BSB – email
Julia Crain / BSB – email
Brandon Warner / BSB – email
Abigail Peltomaa / BSB – email
Eileen Joyce / BSB – email
Sean Peterson/BSB – email
Josh Vincent / WET – email
Scott Bradshaw / W&C – email
Emily Stoick / W&C – email
Pat Sampson / Pioneer – email
Andy Dare / Pioneer – email
Karen Helfrich / Pioneer – email
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BPSOU SharePoint – upload

v



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Ref: 8MO

August 10, 2023

Mr. Mike McAnulty
Liability Manager
Atlantic Richfield Company
317 Anaconda Road
Butte, Montana 59701

**Re: Approval letter for the Butte Priority Soils Operable Unit (BPSOU) Draft Final
Insufficiently Reclaimed Sites – Field Sampling Plan (FSP) BRES No. 17 – Paymaster
(dated July 25, 2023)**

Dear Mike:

The U. S. Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), is approving the *Draft Final Insufficiently Reclaimed Sites – Field Sampling Plan (FSP) BRES No. 17 – Paymaster (dated July 25, 2023)* with the following comments. It is EPA's expectation that the following comments will be addressed prior to final distribution of this FSP. Please attach the Insufficiently Reclaimed Sites quality assurance project plan (QAPP) and the Unreclaimed Sites QAPP to this FSP and distribute once the comments have been addressed.

Comments

1. Previous Evaluation Findings. In the third paragraph, please state if the private property to the east of the site has been previously sampled or sampled under the RMAP program. The current wording is somewhat ambiguous in this regard.
2. Please confirm the naming convention for samples collected under the Unreclaimed Sites QAPP as all proposed samples begin with a prefix "IR" including the samples being collected under the UR Sites QAPP. Please revise as appropriate.

If you have any questions or concerns, please call me at (406) 457-5019.

Sincerely,

**NIKIA
GREENE**

Digitally signed by
NIKIA GREENE
Date: 2023.08.10
08:28:10 -06'00'

Nikia Greene
Remedial Project Manager

Butte File

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August 25, 2023

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Re: Butte Priority Soils Operable Unit (BPSOU) Final Insufficiently Reclaimed Sites – Field Sampling Plan (FSP) BRES No. 17 – Paymaster.

Dear Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company (Atlantic Richfield) to submit the Butte Priority Soils Operable Unit (BPSOU) Final Insufficiently Reclaimed (IR) Sites – Field Sampling and Investigation Plan (FSP) Butte Remediation Evaluation System (BRES) No. 17 – Paymaster.

As described in Appendix D, Attachment C, Section 7.0 of the 2020 BPSOU Consent Decree (CD) (available at <https://www.co.silverbow.mt.us/2161/ButtePriority-Soils-Operable-Unit-Consent-Decree>), sites listed as IR Solid Media Sites within the BPSOU were reclaimed prior to the establishment of the Butte Hill Revegetation Specifications (BHRS), Appendix A to the CD. Since additional reclamation work may be required to bring the sites into compliance with the BHRS, the sites will be evaluated to assess past actions and to identify any site-specific conditions that fail to meet the BHRS.

The site evaluation will include a review of available BRES field evaluations and site construction completion reports and on-site evaluation and sampling. The site evaluation will include sampling within the existing site boundary performed according to the Atlantic Richfield 2023 *Final Insufficiently Reclaimed Sites Quality Assurance Project Plan (QAPP)* (referred to herein as IR Sites QAPP). A link to the IR Sites QAPP is included in Attachment 1.

This FSP describes field evaluation of the IR Site, BRES No. 17 – Paymaster. The sampling boundary and proposed soil sampling stations and deficiencies identified during previous BRES evaluations are shown on Figure 1.



Field sampling within the existing boundary will be performed to determine whether contaminants are present, whether the existing cap and supported growth media are sufficiently protective of human health and the environment, how observed site conditions compare to the BHRS, and whether there are previously unidentified conditions contributing to site deficiencies.

The site evaluation is anticipated to be completed in 2023. A site summary and declaration will be prepared to present all available site data and describe which, if any, BHRS criteria are not met. The site will be evaluated following the Residential Land Use Soil Action Levels for Human Health, Soil Screening Criteria, and cover soil Chemical Suitability Criteria provided in the IR Sites QAPP. Samples obtained outside of the existing reclaimed area will be evaluated following the Soil Action Levels for Human Health and Soil Screening Criteria for Waste Identification in the Atlantic Richfield 2023 *Final Unreclaimed (UR) Sites QAPP* (referred to herein as UR Sites QAPP). A link to the UR Sites QAPP is included in Attachment 1.

If further remediation is recommended after the evaluation and sampling is complete, a remedial action work plan (RAWP) describing actions that will be implemented at the site will be provided for Agency review and approval.

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

Element	Reference Location		
	FSP	IR Sites QAPP	UR Sites QAPP
Title Page and Approval Authority	Approval Letter	Page i	Page i
Site Introduction and Appropriate Agency-Approved QAPP* Reference	Page 1, Page 2		
Data Quality Objectives		Section 2.5	Section 2.5
Site and Sampling Objectives	Figure 1	Section 3.0	Section 3.0
Proposed Schedule for Site Field Work	Page 2		
Site Figure	Figure 1		
Sampling Procedures and Standard Operating Procedures (SOPs)		Section 3.2 Appendix B	Section 3.2 Appendix B
Sample Analysis Methods		Section 3.3	Section 3.3

Background

The Paymaster (BRES No. 17) is approximately 0.13 acre located along North Street directly north of residences located on the north side of Daly Street in Walkerville, Montana. As described in the

BPSOU *Source Areas and Reclaimed Boundary Adjustments*¹, ARCO performed reclamation from 1988 to 1989. Reclamation activities included excavating the Paymaster Dump to approximately 2 feet below the elevation of an adjacent neighbor's yard. The excavation remaining from the Paymaster removal was partially backfilled with Moulton dump material. A layer of lime rock was placed over the Moulton Dump, and the remaining 18 inches was backfilled with Ryan Mine material. The area was then chiseled, fertilized, strawed, and seeded with 20 pounds per acre of the Agency approved Walkerville EPA seed mixture described in the BPSOU *Solid Media Management Program Plan*². The reclaimed area was not fenced, and the public right-of-way was paved with asphalt.

An adjusted boundary has been proposed for BRES No. 17 – Paymaster to accurately represent the reclaimed area and align site boundaries with site remediation efforts completed on the site. As described in the BPSOU *Source Areas and Reclaimed Boundary Adjustments*¹, this was completed by using a high-resolution aerial image and visual comparisons to identify the areas of apparent remediation. Note, the proposed adjusted boundary has not been approved by the Agencies. To verify the proposed adjusted boundary, samples will be collected in areas that are included in the proposed boundary area, but just outside of the original boundary area.

Previous Evaluation Findings

As specified in the CD, information collected during previous site investigations has been reviewed and incorporated into the proposed sampling design. Atlantic Richfield and Butte-Silver Bow (BSB) personnel completed field verification of the site boundary on July 12, 2017. Given the date of reclamation, the site should be investigated to ensure the engineered cap is adequate for operation and maintenance.

The site was evaluated in 2016 and 2020 during the recurring 4-year cycle of field evaluations of previously reclaimed sites within the BPSOU. The results of both field evaluations indicate several of the same issues throughout the site; however, the 2020 evaluation suggests the conditions are deteriorating. A large amount of knapweed, along with dalmatian toadflax, cheatgrass, mustards, and salsify are present throughout the site. Deposition is becoming worse along the north site edge and has created a large barren area. Sedimentation is accumulating and translocating down 2nd Street. Dumping of material, such as tires and other materials, is occurring on the south side of the site. The east side of portion of site is currently used as a residential yard and parking area.

The private property to the east of the site was previously sampled by the Residential Metals Abatement Program (RMAP). Based on sample results, RMAP performed remediation on the residential yard in the northern portion of the property and non-vegetated driveways areas. The residential portion of the site has been proposed to be removed from the boundary under the BPSOU *Source Areas and Reclaimed Boundary Adjustments*¹ and is pending further consideration by the Agencies Any additional sampling will be addressed under the RMAP. Note that the private

¹ Atlantic Richfield Company and Butte-Silver Bow, 2022. Draft Final Source Areas and Reclaimed Boundary Adjustments. Prepared by Pioneer Technical Services, Inc. April 4, 2022.

² Atlantic Richfield Company, 2022. Revised Draft Final Solid Media Management Program Plan. Prepared by Pioneer Technical Services, Inc. August 1, 2022.

properties to the south outside of the existing site boundary have not been sampled, and outreach protocol under RMAP is recommended. Sample results will be included in the forthcoming evaluation summary report, if available.

Previous Sampling Efforts

The Geocortex web-based database at <https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU> contains the records for previous soil samples collected within the BPSOU. The approximate sample stations located on BRES No. 17 are included on Figure 1 with results provided in Table 1 below. Sample results highlighted below exceed CD solid media soil screening criteria. The BPSOU soil action levels and screening criteria are listed in Table 1 and Table 2, respectively, in Section 2.5 of the IR Sites QAPP.

Table 1: Previous Sampling Results from BPSOU Soil Sampling

COCs	Sample ID: WD-025
Arsenic	60 mg/kg
Cadmium	31 mg/kg
Copper	315 mg/kg
Lead	5,690 mg/kg
Zinc	6,560 mg/kg
pH	3.48 S.U.

COC: Contaminant of concern. mg/kg: milligrams per kilogram. S.U.: standard unit.

Preliminary Site Evaluation

A preliminary site evaluation was conducted during development of this sampling plan to inspect current site conditions and identify focus areas for further investigation which included site photographs. The investigation found sediment collection around site edges, well-established vegetation with barren areas interspersed, and various weeds throughout the site. Photograph 1 through Photograph 5 show current site conditions.



Photograph 1: Overview of site looking east.

Snow was still present on site during the original site visit in the spring of 2023. A large pile of plowed snow from neighbors on the east side of the site was observed. Site edges are collecting road sand from the alley behind West Daly Street and 2nd Street. A recently bladed section was observed on the west corner of the site. Transportation of storm water and sediment down 2nd Street was observed; however, it is believed to be road sand and not from the site.



Photograph 2: Snow, melt off, and storm water collection on south side of site.

The south side of site, adjacent to the southern residential lots, collects storm water runoff and was found to be saturated as seen in Photograph 2 above. No rills or erosion were present; however, the slope of the site suggests runoff flows from north to south.



Photograph 3: Barren area.



Photograph 4: Snow piles from neighbors with barren areas.



Photograph 5: Low vegetation area from usage of site.

A rock retention wall was discovered on the east side of the site to support the neighboring driveway. Private trailers are parked above and below the rock wall suggesting the site is being accessed and used for storage. Earthen driveway material has been transported onto the property, causing a barren area which extends to North Street as seen on Photograph 5. A small circular barren patch was observed as saturated from snowmelt, with no vegetation (see Photograph 3).

Figure 1 illustrates the proposed sample stations as sited during the preliminary site evaluation. Adjusted boundary lines, previous sample locations, and other previous findings are included on Figure 1.

Site Characterization Plan

Per the IR Sites QAPP, the site will be sampled at two depth intervals [(1) 0 to 6 inches and (2) 6 to 18 inches] to determine whether waste is present and/or confirm the depth of previous reclamation efforts. Opportunistic samples may be obtained in the field at the discretion of field sampling personnel or Agency oversight representative(s). The field team leader will be responsible for determining the appropriate number and depth of samples as dictated by field conditions.

Samples collected within the approved BRES boundary will be sampled following procedures in the IR Sites QAPP using a systematic procedure to determine the extent of waste present, previous reclamation, and transient material. Samples collected outside of the original BRES boundary will be collected following protocol described in the 2023 UR Sites QAPP. Samples obtained outside of the original boundary will be obtained from three depth intervals [(3) 0 to 2 inches, (4) 2 to 6 inches, and (5) 6 to 12 inches] per the UR Sites QAPP sampling protocol.

Field and laboratory analytical results will be used to prepare the site declaration and prescribe site remedial improvements.

Existing site grading and drainages will be evaluated to determine storm water flow patterns and identify whether additional storm water controls will help prevent sediment migration. Contributing sources of storm water upgradient and adjacent to the site will also be investigated.

At minimum, items identified below, but not specifically detailed in the QAPP, may be evaluated to determine adequacy and to identify if additional remedial measures are necessary. Additional items also may be identified during the remedial design process.

- Evaluate relative percent vegetative cover (as needed).
 - Coordinate and confirm plant species with biology/plant ecologist or related subject matter expert (as needed).
- Evaluate the performance of existing storm water controls to mitigate run-on/runoff.
- Evaluate location and condition of existing storm water controls.
- Identify potential remedial improvements to mitigate site erosion and vegetative areas to meet the BHRS.
- Identify necessary maintenance for successful long-term operation.
- Evaluate steep slopes for erosion of possible mining waste and potential for regrading.

The final remedial cap configuration (i.e., vegetative or engineered) will be coordinated with the landowner's end usage. A final RAWP will be provided for Agency review and approval prior to implementation.

Sampling Procedure

All soil sampling and characterization activities and procedures within the existing site boundary will follow the IR Sites QAPP. Samples will be obtained from the sample stations listed below. The IR Sites QAPP describes the quality assurance/quality control policies and procedures that will be used during sample collection and analyses.

Sample Station	Two Depth Intervals (inches)
IR-17-SS01	(1) 0-6, (2) 6-18
IR-17-SS02	(1) 0-6, (2) 6-18

All soil sampling and characterization activities and procedures outside of the existing site boundary will follow the UR Sites QAPP. Samples will be obtained from the sample stations listed below.

Sample Station	Three Depth Intervals (inches)
IR-17-SS03	(3) 0-2, (4) 2-6, (5) 6-12

This field work is anticipated to be completed in 2023, depending on site conditions.

Site Summary Report and Declaration

After the site evaluation and data collection activities are complete, a site evaluation summary report will be prepared and submitted to Agencies for review and approval. The report will include a summary of all available site sampling data and a site declaration specifying any deficient criteria as specified in the CD.

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

Sincerely,

Mike McNulty

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

Attachments:

Figure 1 – Insufficiently Reclaimed Sites BRES No. 17 - Paymaster Proposed Sample Stations
Attachment 1 – Document Links
Attachment 2 – FSP Submittal List

Cc: Chris Greco / Atlantic Richfield – email
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Mike Mc Anulty / Atlantic Richfield – email
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Gary Icopini / MBMG - email
Becky Summerville / MR - email
John DeJong / UP - email
Robert Bylsma / UP - email
John Gilmour / Kelley Drye - email
Leo Berry / BNSF - email
Robert Lowry / BNSF - email
Brooke Kuhl / BNSF – email
Lauren Knickrehm / BNSF - email
Doug Brannan / Kennedy Jenks - email
Matthew Mavrinac / RARUS - email
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Randa Colling / Pioneer – email
Ian Magruder/ CTEC – email
CTEC of Butte – email
Scott Juskiewicz / Montana Tech – email

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

Figures

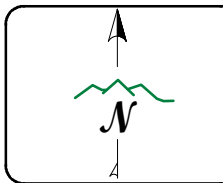
Figure 1 – Insufficiently Reclaimed Sites BRES No. 17 - Paymaster Proposed Sample Stations



LEGEND

	SAMPLE UNDER IR QAPP		PROPERTY OWNERSHIP		BRES EVALUATION BARREN AREA
	SAMPLE UNDER UR QAPP		ACCESS PROPERTY OWNERSHIP		BRES BOUNDARY (ORIGINAL)
	HISTORIC SAMPLE STATIONS				BRES BOUNDARY (PROPOSED ADJUSTMENT)

THE PARCEL BOUNDARIES SHOWN ARE FOR REFERENCE USE ONLY AND DO NOT REPRESENT A LEGAL SURVEY



DISPLAYED AS:
 PROJECTION/ZONE: MSP
 DATUM: NAD 83
 UNITS: INT'L FT
 SOURCE: PIONEER/BSR/AR/QSI 2020

FIGURE 1
INSUFFICIENTLY RECLAIMED SITE BRES No.17 PAYMASTER

DATE: 4/28/2023

Attachment 1
Document Links

Document Links

Insufficiently Reclaimed Sites QAPP:

<https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/EuRW3KcNuu9CqOHRiP3ENvsBOUc-dYqdITUbZZtCVROTAA>³

Unreclaimed Sites QAPP:

<https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/EtZbDgcepsdEie6VxUMdW88BbKopRVYj5ZsLN0sG3RkrhA>⁴

³ Please note that the link provided is valid for one year from the date of this submittal.

⁴ Please note that the link provided is valid for one year from the date of this submittal.

Attachment 2
FSPs Submittal List

Site	Submittal Date	Approval Date
BRES No. 104 – Colorado Dump Shaft	9/29/2021	11/5/2021
BRES No. 104 – Colorado Dump Shaft, Final Revised	12/2/2021	12/6/2021
BRES No. 154 – Clark Mill Tailings NE	12/1/2021	12/6/2021
BRES No. 30 – Atlantic-1	1/12/2022	2/22/2022
BRES No. 16 – Curry	1/12/2022	2/22/2022
BRES No. 8 – Belle of Butte	3/11/2022	9/26/2022
BRES No. 38 – Sister Dump	6/16/2022	9/26/2022
BRES No. 32 – Corra 2 Dump	6/20/2022	6/30/2022
BRES No. 158 – Waste Rock Dump	6/20/2022	7/11/2022
BRES No. 50 Zelia	6/22/2022	6/30/2022
BRES No. 93 – Soudan Dump	6/23/2022	6/30/2022
BRES No. 96 Washoe Dump	6/23/2022	7/11/2022
BRES No. 133 – Dexter Mill	7/14/2022	7/26/2022
BRES No. 37 – Josephine Shaft	7/20/2022	7/26/2022
BRES No. 34 – Eveline Dump	7/22/2022	8/2/2022
BRES No. 17 – Paymaster	7/25/2023	8/10/2023
BRES No. 31 – Waste Dump #5	7/25/2023	8/10/2023
BRES No. 48 – Old Glory West	7/25/2023	8/10/2023
BRES No. 66 – West Ruby Dump	7/25/2023	8/10/2023
BRES No. 134 – Star West Dump	7/25/2023	8/10/2023
BRES No. 174 – Buffalo South and Buffalo Ditch	7/25/2023	8/10/2023
BRES No. 84 – Mandan Park	7/25/2023	8/2/2023