Summer 7-22-2022

Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed Sites - Field Sampling Plan (FSP) BRES No. 34 – Eveline.

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July 22, 2022

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Re: Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed Sites - Field Sampling Plan (FSP) BRES No. 34 – Eveline.

Dear Agency Representatives:

I am writing to you on behalf of Atlantic Richfield Company to submit the Butte Priority Soils Operable Unit (BPSOU) Draft Final Insufficiently Reclaimed (IR) Sites - Field Sampling and Investigation Plan (FSP) Butte Remediation Evaluation System (BRES) No. 34 – Eveline.

As described in Appendix D, Attachment C to the 2020 BPSOU Consent Decree (CD) (available at https://www.co.silverbow.mt.us/2161/ButtePriority-Soils-Operable-Unit-Conse), sites listed as IR Solid Media Sites within the BPSOU were reclaimed prior to the establishment of the Butte Hill Revegetation Specifications (BHRS), which is Appendix B of Appendix E to the U.S. Environmental Protection Agency (EPA) 2006 Record of Decision (ROD) contained in 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 previous BRES field evaluations and site construction completion reports along with on-site evaluation and sampling. The site evaluation will include sampling within the existing site boundary performed according to the Atlantic Richfield Company *2022 Final Insufficiently Reclaimed Sites Quality Assurance Project Plan (QAPP)* (referred to as the IR Sites QAPP. The IR Sites QAPP is available at the following link:

https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/Eid2SfSSinhOsfQXY5CXGEoBe5IIf5IQO01hBO43ZROgpg[1].

Field sampling within the existing boundary will be performed to determine whether contaminants are present, whether growth media is adequate, and whether there are previously unidentified sources contributing to site deficiencies.

Additional sampling performed in adjacent areas outside of the existing site boundary to characterize gap zones where site characterization may be unknown or incomplete will be conducted according to the Atlantic Richfield Company *Final Unreclaimed Sites Quality Assurance Project Plan (QAPP)* (referred to as the Unreclaimed Sites QAPP) which also is a component of the BPSOU Solid Media Management Project Plan and available at the following link:

https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/Ev1dhUeMuUdLjU8tnuV5RioBvJZRYc2HpgEjM9KzT-PpjQ[2].

Sample results in the areas outside of the existing site boundary will be evaluated to determine if contaminants are present beyond the site boundary at concentrations exceeding action levels listed in Table 1 or Table 2 in the Unreclaimed Sites QAPP. Final sampling data will be used to assist in determining the final site declaration.

This FSP provides details related to the field evaluation of the IR Site BRES No. 34 – Eveline. Proposed soil sampling stations and areas of known deficiencies are shown on Figure 1.

The site evaluation is anticipated to be completed in summer 2022. 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 Recreational Land Use Waste Identification and Action Level Criteria provided in the IR Sites and Unreclaimed Sites QAPPs. A remedial action work plan (RAWP) describing actions that will be implemented at the site will be provided for Agency review and approval.

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

Submittal	Site	Submittal Date	Approval Date
1	BRES No. 104 – Colorado Dump Shaft	9/29/2021	11/5/2021
1R	BRES No. 104 – Colorado Dump Shaft, Final Revised	12/2/2021	12/6/2021
2	BRES No. 154 – Clark Mill Tailings NE	12/1/2021	12/6/2021
3	BRES No. 30 – Atlantic-1	1/12/2022	2/22/2022
4	BRES No. 16 – Curry	1/12/2022	2/22/2022

[1] Please note the link provided is valid for one year from the date of this submittal.
[2] Please note the link provided is valid for one year from the date of this submittal.

Submittal	Site	Submittal Date	Approval Date
5	BRES No. 8 – Belle of Butte	3/11/2022	
6	BRES No. 38 – Sister Dump	6/16/2022	
7	BRES No. 32 – Corra 2 Dumps	6/20/2022	6/30/2022
8	BRES No. 158 – Waste Rock Dump	6/20/2022	7/11/2022
9	BRES No. 50 – Zelia	6/22/2022	6/30/2022
10	BRES No. 93 – Soudan Dump	6/23/2022	6/30/2022
11	BRES No. 96 – Washoe Dump	6/23/2022	7/11/2022
12	BRES No. 133 – Dexter Mill	7/14/2022	
13	BRES No. 37 – Josephine Shaft	7/20/2022	
14	BRES No. 34 - Eveline	7/22/2022	

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

	Reference Location		
Element	**FSP**	**IR Sites QAPP**	**Unreclaimed Sites QAPP**
Title page and approval authority.		Page i	Page i
Introduction and appropriate Agency-approved QAPP reference.	X		
Goals and objectives of sampling.		Section 2.4, Section 3.2	Section 2.4, Section 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 (ID).	X	Section 3.2.1	Section 3.2.1
Field activity methods and procedures, standard operating procedures.		Section 3.2, Table 4	Section 3.2, Table 4
Sample labeling and shipping.		Section 3.2.5, Appendix C	Section3.2.5, Appendix C
Sample analysis specifying X-ray fluorescence vs. laboratory analysis and laboratory name.		Section 3.3	Section 3.3
Figure showing the site and/or area represented by a sample, sample ID, and aliquot locations for composite samples.	X		

Background

The Eveline Dump (BRES No. 34) is located north of Ryan Road, and west of Walkerville Drive and is approximately 2.7 acres. Reclamation was completed by ARCO from 1990 to 1991 and consisted of partial waste removal and grading. Site material was used to fill the Eveline Shaft and/or was

disposed of off the site. Site grading was completed to a slope of 4 horizontal to 1 vertical or to match the surrounding topography. Lime rock from the Anaconda Quarry was spread at a rate of 350 tons per acre. Soil from the Minnie Irvine borrow area was applied at a depth of 18 inches. A granular fertilizer mix (11-52-0) was broadcast at a rate of 300 pounds per acre. The site was chisel plowed following the fertilizer application, and a double disc drill seeder was used to plant the Walkerville EPA seed mixture at a rate of 20 pounds per acre. Straw was then spread at a rate of 2 tons per acre. There is a concrete capped shaft in the central portion of the site; previous evaluation of the cap notes it was in good condition.

Previous Evaluation Findings

The site was evaluated in 2017 during the recurring BRES site evaluation process. Review of previous site evaluations will be incorporated into site evaluation, sampling, and forthcoming remedial action. Preliminary review of the evaluation finding indicate issues with vegetation, exposed waste, site edges, gullies, and barren areas. The south edge of the site has low pH and what appears to be mine waste. There are noxious weeds and undesirable species with no vegetation along the south face. Barren areas are forming rills, and sediment conveyance has been observed along the south boundary. The mine shaft located on site appears to be in good condition. The west slope of the site has erosion, deposition, and minimal vegetation.

Previous Sampling Efforts

Data obtained from the Geocortex web-based database at https://eis2.woodardcurran.com/Html5Viewer/index.html?viewer=BPButte.BPSOU contain the records for previous soil samples collected near BRES No 34 – Eveline. The approximate sample stations are included on Figure 1 with results provided in Table 1 below. Sample results highlighted below exceed ROD Solid Media soil screening criteria. The BPSOU action levels are listed in Table 1 and Table 2 of the IR Sites QAPP Section 2.4.

Table 1: Previous Sampling Results from BPSOU Soil Sampling

COCs	Sample ID: **WD-020**	Sample ID: **WD-021**	Sample ID: **TB-SO-23**	Sample ID: **TB-SO-25**
Arsenic	121 mg/kg	68 mg/kg	71 mg/kg	132 mg/kg
Cadmium	23 mg/kg	21 mg/kg	30 mg/kg	4 mg/kg
Copper	290 mg/kg	287 mg/kg	236 mg/kg	342 mg/kg
Lead	1,860 mg/kg	3,690 mg/kg	1,650 mg/kg	522 mg/kg
Zinc	6,120 mg/kg	6,090 mg/kg	8,800 mg/kg	1,180 mg/kg
pH	5.48 S.U.	3.59 S.U.	5.8 S.U.	3.30 S.U.

Preliminary Site Evaluation

A preliminary site visit was conducted to better qualify existing site conditions and identify areas of focus for additional evaluation. Site photographs from the Site visit conducted in the spring of 2022 are included in this section for reference. The south slope has intense erosion and sediment

movement onto the roadway transporting south to a rock catch and drain. Sage and grasses are present with barren areas scattered throughout the vegetation. The east slope has trees along the roadway and has poor grass cover with what looks to be decomposed granite, sands, and weeds throughout the area. Temporary Best Management Practices have been installed along the west boundary to manage sediment translocation along the roadway.

Photograph 1: Barren Areas Throughout the Site. Sage and Grasses Are Pedestalling Due to Erosion.

Photograph 2: Steep Slopes with Heavy Erosion onto Road.

Photograph 3: Erosion and Staining Along South Slope.

Photograph 4: Sediment Control on Southeast Corner of Site Capturing Sediment Migration.

Photograph 5: Temporary Best Management Practices along West Boundary. Evidence of Sediment Migration.

Photograph 6: East Facing Slope has Grass Establishment, Very Patchy.

Site Characterization Plan

Per the IR Sites QAPP, the site will be sampled at 2 depth intervals [(1) 0 to 6 inches and (2) 6 to 18 inches] to determine whether mining related waste is present and/or confirm the depth of previous reclamation efforts. Additional samples obtained outside of the existing site boundary will be obtained from 3 depth intervals [(3) 0 to 2 inches, (4) 2 to 6 inches, and (5) 6 to 12 inches] per the Unreclaimed Sites QAPP sampling protocol. Figure 1 illustrates the proposed sample stations. 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 sampling protocol as dictated by the location of the opportunistic sample(s).

Results will be used to prepare the site declaration and prescribe site remedial improvements. The overall site will be sampled following procedures in the IR Sites QAPP using a systematic procedure to determine spatial characterization of waste, parameters of previous reclamation, and extent of transient material. Sampling performed outside of the existing boundary will be used to determine if waste extends beyond the existing boundary at concentrations which exceed levels listed in Table 1 or Table 2 of the Unreclaimed Sites QAPP and will be applied to prepare the final site declaration.

Existing site grading and drainages will be evaluated to determine storm water flow patterns and identify whether additional storm water controls are necessary to prevent sediment migration. The location and condition of existing storm water features will be field-verified and recorded to implement appropriate corrective actions. Upgradient and adjacent contributing sources of storm water will also be investigated.

Items identified below will be evaluated to determine whether they are adequate and to identify additional remedial measures. The following provides the minimum of site characterization items to consider. Additional items may be identified during the remedial design process.

- Evaluate plant species cover to BHRS seed mix specifications.
    - Coordinate and confirm plant species with biology/plant ecologist or related subject matter expert.
- Evaluate site storm water controls to mitigate run-on/runoff.
- Identify remedial improvements to mitigate site erosion and improve vegetative areas to meet BHRS.
- Identify maintenance items for successful long-term operation.

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.

Sampling Procedure

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

Sample Station	2 Depth Intervals (inches)
IR-34-SS01	(1) 0-6, (2) 6-18
IR-34-SS02	(1) 0-6, (2) 6-18
IR-34-SS03	(1) 0-6, (2) 6-18
IR-34-SS04	(1) 0-6, (2) 6-18
IR-34-SS05	(1) 0-6, (2) 6-18
IR-34-SS06	(1) 0-6, (2) 6-18
IR-34-SS07	(1) 0-6, (2) 6-18
IR-34-SS08	(1) 0-6, (2) 6-18
IR-34-SS09	(1) 0-6, (2) 6-18
IR-34-SS10	(1) 0-6, (2) 6-18
IR-34-SS11	(1) 0-6, (2) 6-18
IR-34-SS12	(1) 0-6, (2) 6-18
IR-34-SS13	(1) 0-6, (2) 6-18

All soil sampling and characterization activities beyond the existing site boundary at sample stations listed below will follow the Unreclaimed Sites QAPP.

Sample Station	3 Depth Intervals (inches)
IR-34-SS14	(3) 0-2, (4) 2-6, and (5) 6-12
IR-34-SS15	(3) 0-2, (4) 2-6, and (5) 6-12
IR-34-SS16	(3) 0-2, (4) 2-6, and (5) 6-12
IR-34-SS17	(3) 0-2, (4) 2-6, and (5) 6-12

Fieldwork is anticipated to be completed in 2022.

Site Summary Report and Declaration

After the site evaluation and data collection activities have been completed, a 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 BHRS criteria.

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

Sincerely,

Mike McAnulty

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

Attachments:

Figure 1 – Insufficiently Reclaimed Sites BRES No. 34 Eveline Proposed Sample Stations
Attachment 1 - Document Links

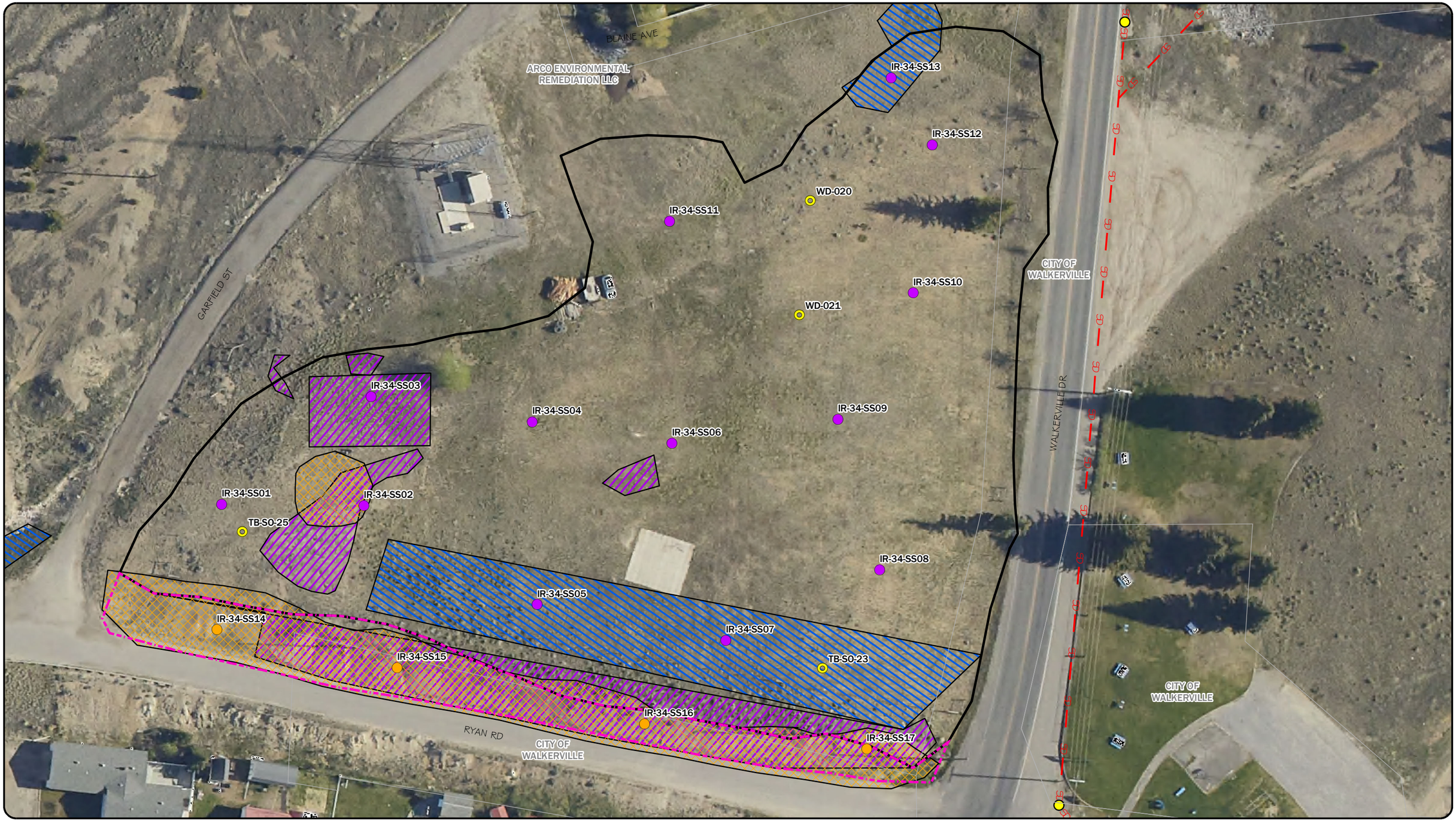
Cc: Patricia Gallery / Atlantic Richfield - email
Chris Greco / Atlantic Richfield – email
Josh Bryson / Atlantic Richfield - email
Loren Burmeister / Atlantic Richfield – email
Dave Griffis / Atlantic Richfield - email
Jean Martin / Atlantic Richfield - email
Irene Montero / Atlantic Richfield - email
David A. Gratson / Environmental Standards / email
Mave Gasaway / DGS - email
Brianne McClafferty / Holland & Hart - email
Joe Vranka / EPA - email
David Shanight / CDM - email
Curt Coover / CDM - email
James Freeman / DOJ - email
John Sither / DOJ - email
Dave Bowers / DEQ - email
Carolina Balliew / DEQ - email
Matthew Dorrington / DEQ – email
Wil George / DEQ – email
Jim Ford / NRDP - email
Pat Cunneen / NRDP - email
Harley Harris / NRDP - email

Katherine Hausrath / NRDP - email
Meranda Flugge / NRDP - email
Ted Duaime / 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
Lauren Knickrehm / 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
Eileen Joyce / BSB – email
Sean Peterson/BSB – email
Gordon Hart / BSB – email
Jeremy Grotbo / BSB – email
Karen Maloughney / BSB – email
Josh Vincent / WET - email
Craig Deeney / TREC - email
Scott Bradshaw / TREC - email
Brad Archibald / Pioneer - email
Pat Sampson / Pioneer - email
Joe McElroy / Pioneer – email
Andy Dare / Pioneer – email
Karen Helfrich / Pioneer - email
Leesla Jonart / Pioneer - email
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. 34 Eveline Proposed Sample Stations



LEGEND

- SAMPLE UNDER IR QAPP
- SAMPLE UNDER UR QAPP
- HISTORIC SAMPLE LOCATION
- INSUFFICIENTLY RECLAIMED AREA
- PROPOSED IR BOUNDARY CHANGES
- PROPERTY OWNERSHIP
- BRES EVALUATION EXPOSED WASTE
- BRES EVALUATION BARREN AREA
- BRES EVALUATION VEGETATIVE IMPROVEMENT
- STORM WATER LINE
- STORM WATER INLET

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

N

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

0 25 50 100
Feet

FIGURE 1

INSUFFICIENTLY RECLAIMED SITES BRES No. 34 EVELINE PROPOSED SAMPLE STATIONS

PIONEER TECHNICAL SERVICES, INC.

DATE: 4/26/2022

Path: Z:\Shared\Active Projects\ARCO\BPSOU\LandSupport\SolidMedia\Insufficiently_Unreclaimed\IR_Sampling\IR34_Fig_001_22.mxd

Attachment 1
Document Links

Document Links

Insufficiently Reclaimed Sites QAPP:

https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/Eid2SfSSinhOsfQXY5CXGEoBe5IIf5IQO01hBO43ZROgpg[3].

Unreclaimed Sites QAPP:

https://pioneertechnicalservices.sharepoint.com/:f:/s/submitted/Ev1dhUeMuUdLjU8tnuV5RioBvJZRYc2HpgEjM9KzT-PpjQ[4].

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