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Butte Priority Soils Operable Unit (BPSOU) Final Reclaimed Areas Maintenance and Monitoring (M&M) Plan and Butte Reclamation Evaluation System (BRES) Field Manual

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RE: Butte Priority Soils Operable Unit (BPSOU) Final Reclaimed Areas Maintenance and Monitoring (M&M) Plan and Butte Reclamation Evaluation System (BRES) Field Manual

Agency Representatives:

I am writing you on behalf of Atlantic Richfield Company to submit the *Butte Priority Soils Operable Unit (BPSOU) Final Reclaimed Areas Maintenance and Monitoring (M&M) Plan* and *Butte Reclamation Evaluation System (BRES) Field Manual* for your review and approval. Response to Agency comments provided April 5, 2019, are provided below. The documents referenced above have been revised to address or include appropriate language provided in the comments below.

1.0 General Comment:

Any time field sampling is to be conducted at a site, including soil sampling and field parameters (e.g., soil pH), a site-specific sampling and analysis plan (SAP) must be prepared and approved by EPA/DEQ in advance of the sampling. The plans may be brief and cover a single site or multiple sites, but must reference an approved quality assurance project plan (QAPP), such as Reclaimed Areas QAPP or Unreclaimed areas QAPP, and include the following information, at a minimum:

- *Title and Approval Page*
- *Introduction*
- *Goals, Objectives, and Schedule for Field Work*
- *Personnel Responsibilities and Contact Information*
- *Sampling Locations, including number of samples to be collected and sample depths*
- *Field Activity Methods and Procedures, specifying the SOPs or SMPs to be employed*
- *Sample Labeling and Shipping*



- *Sample Analysis, specifying XRF vs. lab analysis and lab name*
- *Figure showing the site and/or area represented by a sample, sample ID, and aliquot locations for composite samples*

The SAP may be submitted separately or incorporated into an associated document, such the BRES Site Specific Corrective Action Plans. If desired, a SAP form providing the above information may be acceptable.

Settling Defendants Response: Comment noted. Field sampling events will be described in an Agency-approved field sampling plan (FSP). Section 2.2.2 of the M&M Plan has been updated to specify an Agency-approved FSP. The M&M Plan has been revised to include Section 7.4 Field Sampling, which includes the protocol recommended.

2.0 Specific Comments - M&M Plan:

- 1) Section 1.3, Roles and Responsibilities. *This section should identify the names and the roles and responsibilities of the personnel included in the program organization and communication structure shown in Figure 2.*

Settling Defendants Response: Comment noted.

- 2) Section 7.2.1. Site Corrective Actions. *EPA is on-board with BSB's use of field-capable tablet devices to delineate site features, boundaries, polygons, and the like, and sees this as a significant step forward for the BRES Program. However, from EPA's perspective, a method is needed to easily track and document progress or regression, corrective actions, boundary and polygon changes, and maintenance implemented at each site. Please propose a method by which EPA can follow a site's evaluation, corrective action, and maintenance history and readily understand current site conditions (at least since the site's most recent evaluation).*

Settling Defendants Response: In general, site field evaluations, maintenance activities, and boundary adjustments will be available through ESRI ArcGIS online. As described in Section 9.1, all field data are saved to ArcGIS online as well as the BPSOU database to allow accurate tracking and management of maintenance work completion, materials used, equipment, and daily logs. Monitoring data are available for review through ArcGIS Online. Maintenance data are available via the secure cloud-based Microsoft Access database.

Section 7.2.1 has been revised to include "The spatial data pertaining to the identification of conditions in the field along with maintenance activities and suggested boundary adjustments will be collected using ArcGIS software and applications." In addition, BRES field evaluation summary reports, corrective action plans, and annual operation and maintenance reports will be prepared and submitted for Agency review and approval.

- 3) Section 7.2.4, Vegetative Caps. *In the second sentence, the terminology used is inconsistent with the BHRS. The term "topsoil" is not included in the Butte Hill Cover Soil specifications. The BHRS requires 18 inches of cover soil meeting specified minimum requirements, with loamy sand acceptable from 6 to 18 inches only in certain circumstances with EPA approval. In the fourth sentence, the cover soil approval form was not located in Appendix B.2. Please include this form in the next version of this document.*

Settling Defendants Response: The terminology in Section 7.2.3 has been changed to reference 18 inches of cover soil meeting Butte Hill Cover Soil requirements to maintain consistency with Butte Hill Revegetation Specifications. The cover soil approval form will be included in the next version.

- 4) Section 7.2.7, Granular Fertilizer Amendment. *The fertilizer application rates are not consistently stated in the M&M Plan. Section 7.2.7 states the application of 25 lbs/acre of nitrogen and 0 (zero) lbs/acre of phosphorus and potassium. However, the BHRS and SMP-6 specify 60 lbs/acre of nitrogen, 80 lbs/acre of phosphorus, and 150 lbs/acre of potassium, and do not discuss an alternate NPK = 25-0-0. Please clarify and discuss the differing application rates with respect to improving existing vegetation versus new reclamation.*

Settling Defendants Response: The text in Section 7.2.6 has been revised to provide fertilizer application rate for newly reclaimed areas (NPK=60-80-150). Fertilizer amendment may be applied at a rate NPK=25-0-0 to improve the cover of existing vegetation. SMP-6 has been updated to reflect this change.

- 5) Section 7.3, Field Sampling. *Please modify the last sentence of this paragraph to read: "Collection and analysis of composite soil samples must follow the corresponding SMPs (Appendix B.1) and Section 7.3.2, as described in the site-specific SAP."*

Settling Defendants Response: The text has been updated to reflect site-specific field sampling plans.

- 6) Section 7.3.2, Composite Soil Sample Depths. *Please add the following sentence to the end of the last paragraph: "... 100 square feet. Prior to sampling activities, a site-specific SAP will be presented for review and approval. The sampling requirements for a site or location will be specified in the site-specific SAP."*

Settling Defendants Response: The text has been updated as "Prior to sampling activities, a site-specific FSP will be submitted for Agency review and approval. The sampling requirements for a site or location will be specified in the site-specific FSP."

- 7) Section 10.2. Corrective Action Plan. In the last sentence of this section replace "compete" with complete.

Settling Defendants Response: The text has been updated as recommended.

- 8) Section 11. Revisions and Updates. Please modify the first sentence to read: "This M &M Plan will be reviewed annually, and revisions and updates to address the following will be made to this document... "

Settling Defendants Response: The text has been updated as requested.

- 9) SMP-1. Soil pH Field Testing. In the SCOPE, please add the default instrument that should be used. For example, "Work described in this procedure includes soil sampling using a hand-held soil pH meter, a Hanna Instruments Model# 99121 or equivalent." In 1. Sample Size, add the following: "A minimum of one complete pH sample is recommended per ¼ acre with at least one duplicate pH sample per site. At larger sites, take duplicate pH samples at a rate of 1 for every 20 samples analyzed."

Settling Defendants Response: The text has been updated as requested.

- 10) SMP-10. Boundary Revision/Creation. There are two SMP- 10s: Boundary Revision/Creation and Polygon Boundary Revision. Please revise. Modify Task 4 as follows: "... generated boundaries and match discrepancies. Submit boundary revisions to the QAM for review and approval." Modify Task 5 as follows: "a. Finalize boundary delineations and submit to EPA/DEQ for approval." "b. After EPA/DEQ approval of the boundary revision, upload BRES Quadrant Boundary to BSB database."

Settling Defendants Response: The text in SMP-10 Boundary Revision/Creation Task 4 has been updated as requested. In addition, a new procedure SMP-14 Maintenance Polygon Creation has been created.

- 11) SMP-11, Engineering Assessment. Please change the name of SMP-11 to "Vegetation or Reclamation Improvement and Engineering Assessment". Insert the following Introduction before Task 1:

"a. Vegetation or Reclamation Improvement - For polygons or sites in the lowest vegetation cover category (less than 21 percent) or meet the barren area criterion, a Vegetation Improvement (VI) or Reclamation Improvement (RI) plan is implemented for those polygons or sites. If a site undergoes VI and then falls into the less than 21 percent live cover category again during any future BRES evaluations, the polygon is then required to undergo an RI, in order to

meet the BHRS. The VI or RI must be conducted by qualified personnel within their range of expertise. In general, small-scale VI items may be directly addressed by BSB whereas moderate- to large-scale VI or RI may require the use of a reclamation specialist to design and implement a corrective action.

b. Engineering Assessment - An Engineering Assessment (EA) at a site is performed to determine the appropriate type of corrective action to address erosion, site edge, exposed waste, bulk soil failure or mass instability, and gully trigger items identified during a BRES site evaluation. The EA must be conducted by qualified personnel within their range of expertise. In general, small-scale EA trigger items may be directly addressed by BSB whereas moderate- to large-scale EAs may require the use of a professional engineer to design and implement a corrective action."

Modify Task 1 (Review Field Report) as follows: "a. The BSB Operations Manager will review the annual BRES evaluation to determine initial site characteristics and deficiencies, and then assess the need for a VI, RI, or EA. Additionally, the need for inclusion of a reclamation specialist or professional engineer to assist with the design and implementation of the corrective action will be determined by the BSB Operations Manager."

Modify Task 3 (Soil Sampling) as follows: "b. XRF analysis per SMP-13 to determine if the action more than 1 sample per 100 square feet (ft²). Note: Follow the sampling requirements for a site or location as specified in the site-specific FSP."

Settling Defendants Response: The SMP-11 has been updated as requested.

12) *SMP-12, Weed Control. In a new task, please clarify and explain how and where areas needing weed control are delineated for the personnel conducting weed spraying. Are any other herbicides besides 2,4-D used by the PRP group (e.g., Milestone®, Tordon 22K®, Roundup®) to control spotted knapweed? Please clarify.*

Settling Defendants Response: A new task "Weed Control Delineation" has been added to SMP-12. The 2,4-D specified in the SMP is the preferred herbicide used to control spotted knapweed. Additional alternative products may be used in the future. Alternative products will be listed in corrective action plans and approved for use during the Agency review process.

13) *SMP-13, XL3 X-Ray Fluorescence (XRF) Analyzer. In the last paragraph of the Task for QA/QC Requirements, the procedure described for a "duplicate sample" actually describes the procedure for a laboratory duplicate sample. Please clarify this and add a procedure for the analysis of field duplicate samples.*

Settling Defendants Response: SMP-13 has been updated to reference field replicate and duplicate samples and the option for laboratory confirmatory samples.

3.0 Specific Comments - BRES Field Manual:

Note: The BRES Field Manual has been significantly revised beyond the scope of Agency comments. Many comments are no longer relevant as referenced content has been removed from the document. The response to comments below provides reference to appropriate sections in the revised document as applicable.

- 1) Section 1.0, Introduction. After the second sentence of the second paragraph, insert the following text: "The BRES was specifically designed for sites where the response action left mine waste in-place. At these sites, vegetated and engineered cap integrity is critical to ensuring waste does not become exposed." Add the following to the end of the second paragraph: "This BRES field manual summarizes the BRES methodology and is provided to the field crew as a training guide and to assist them with the field evaluation process."

Settling Defendants Response: The text has been updated as requested.

- 2) Section 2.2, Evaluation Objectives. In the first sentence of the first paragraph, correct spelling of "performed". Modify the last sentence of the fifth paragraph to read: "The overall size of the response action site and the potential size of polygons must also be evaluated (see the subsections below for a discussion on the metrics used to determine when polygon delineation is appropriate)." Modify the second sentence of the sixth paragraph to read: "Triggers are specific parameters and their associated metrics (see the subsections below)."

Settling Defendants Response: Evaluation Objectives are described in Section 5.1 of the revised document.

- 3) Section 3.1, Management and Administration. This section should identify the names and the roles and responsibilities of the personnel included in the BRES management and administration structure shown in Figure 3-1.

Settling Defendants Response: The names and responsibilities of personnel have been added to the revised plan.

- 4) Section 3.3.1, Vegetation. A standard operating procedure describing the modified point intercept method should be prepared and included with the BRES Manual. The procedure should explain, among other items, the process for moving the laser pointer with a grid of 10 points on a frame, the random method procedure for relocating the frame, and guidelines for selecting the number of frames necessary for a site.

Settling Defendants Response: A new procedure BRES-SOP-1, Point Intercept Method, has been created as requested.

- 5) Section 3.6, Opportunistic Maintenance Observations. *The second sentence states: "To improve efficiencies, EPA and the Potentially Responsible Party (PRP) Group combined these [opportunistic maintenance observations] evaluations into the BRES evaluation protocol." However, the location in the BRES Manual where opportunistic maintenance observations are included in the BRES evaluation protocol could not be found. Like Section 7.7 in the M&M Plan, this section should describe the scope opportunistic maintenance observations so that the field teams are aware that these items are part of their BRES evaluation.*

Settling Defendants Response: The second sentence "To improve efficiencies, EPA and the Potentially Responsible Party (PRP) Group combined these evaluations into the BRES evaluation protocol" has been removed from the BRES Field Manual. Opportunistic maintenance observations are not in the scope of field teams performing BRES evaluations. BSB maintenance personnel possess field tablets to record observations at any time throughout the season.

- 6) Section 4.1.1. Site Boundary Delineation Process. *Add the following sentence to the end of the last paragraph: "All boundary adjustments must be submitted by the PRP Group to EPA/DEQ for approval."*

Settling Defendants Response: The section describing the boundary delineation process has been removed from the revised BRES Field Manual.

- 7) Section 4.1.3. Alteration of Area Boundaries. *Add the following sentence to the end of the last paragraph: "All boundary adjustments must be submitted by the PRP Group to EPA/DEQ for approval."*

Settling Defendants Response: The section describing the alteration of area boundaries has been removed from the revised BRES Field Manual.

- 8) Section 4.1.4. Routine Maintenance Observation Evaluations and Polygons. *This section seems to be referring to Section 3.6, not Section 3.5. Please revise accordingly.*

Settling Defendants Response: The referenced sections have been removed from the revised BRES Field Manual.

- 9) Section 5.4.1. Vegetation. *In the second to last sentence, it is stated that this "... QC process must be completed at a frequency of no less than once per every 3 days or 75 acres evaluated*

using the modified point intercept method. Please explain where and how this QC step will be documented.

Settling Defendants Response: The referenced text in Section 4.5 of the revised Plan has been removed.

10) Section 6.3.1, Site Edges. Add the following sentence at the end of the last paragraph: "The captured site edge will then be tracked for future trend analysis to determine if the site edge condition is improving or declining during subsequent BRES evaluation cycles."

Settling Defendants Response: The text in Section 2.9 of the revised Plan has been updated to state, "The site edge will then be recorded for future analysis during subsequent BRES evaluation cycles to determine if the site edge condition is improving or declining."

11) Section 7.2.1, Site Corrective Actions. EPA is on-board with BSB's use of field-capable tablet devices to delineate site features, boundaries, polygons, and the like, and sees this as a significant step forward for the BRES Program. However, from EPA's perspective, a method is needed to easily track and document progress or regression, corrective actions, boundary and polygon changes, and maintenance implemented at each site. Please propose a method by which EPA can follow a site's evaluation, corrective action, and maintenance history and readily understand current site conditions (at least since the site's most recent evaluation).

Settling Defendants Response: The BRES Field Manual does not contain Section 7.2.1. Please refer to M&M Plan Specific Comment #2 regarding corrective actions.

End of Comments

Please note, additional revisions related to reclaimed areas may be warranted to reflect the forthcoming Boundary Adjustments Report. Revisions will be made to the appropriate documents within the M&M Plan at that time.

The documents are available at the links below

Reclaimed Areas M&M Plan - <https://pioneertechnicalservices.sharepoint.com/:f/s/submitted/Eskm-R2i2aZAsX73cjh61KwBFDgmwDna4UuzMckMCj-FYA>

BRES Field Manual

<https://pioneertechnicalservices.sharepoint.com/:f/s/submitted/EmGbw6qbnCJLt9TmTUbdIcBumcgFG8mOL-E1pBlcFkwTg>

If you have questions or concerns, please do not hesitate to call me at (406) 723-1834.

Sincerely,



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David Shanight / CDM - email
Curt Coover / CDM - email
James Freeman / DOJ - email
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