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### **Re: Comments on the Butte Priority Soils Operable Unit (BPSOU) Draft Blacktail Creek Riparian Actions, Pre-design Investigation Work Plan & Uniform Federal Policy- Quality Assurance Project Plan, (dated June 27, 2023)**

Nikia Greene

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August 3, 2023

Ms. Carolina Balliew  
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Montana Department of Environmental Quality  
1520 East 6<sup>th</sup> Avenue  
Helena, MT 59601

**Re: Comments on the Butte Priority Soils Operable Unit (BPSOU) Draft Blacktail Creek Riparian Actions, Pre-design Investigation Work Plan & Uniform Federal Policy-Quality Assurance Project Plan, (dated June 27, 2023)**

Dear Carolina:

The U.S. Environmental Protection Agency (EPA) is providing comments on the *Butte Priority Soils Operable Unit (BPSOU) Draft Blacktail Creek Riparian Actions, Pre-design Investigation Work Plan & Uniform Federal Policy-Quality Assurance Project Plan (dated June 27, 2023)*. Please address these comments and submit a final version and crosswalk for EPA review and approval.

**Comments on: Response to EPA Comments Dated March 21, 2023**

**General Comment No. 1:** Montana Department of Environmental Quality (MDEQ) did not submit the Remedial Design Work Plan (RDWP) prior to the submittal of the Draft Final Pre-Design Investigation Work Plan (PDIWP) as specified in Appendix H to the Consent Decree: Blacktail Creek (BTC) Riparian Actions Outline.

**MDEQ Response:** *The United States Environmental Protection Agency (EPA) and MDEQ have come to the decision that MDEQ will submit the RDWP at a later date.*

**Further EPA Comment:** No date is specified in MDEQ's response or in the Draft Final PDIWP. In the opening paragraphs (Introduction) of the Draft Final PDIWP, the text states: "This site-specific BTC Riparian Actions PDI Work Plan and Sampling and Analysis Plan (SAP) was prepared in accordance with the BTC Riparian Actions Outline presented in Appendix H to the BPSOU CD." This is not the case because the RDWP was not submitted beforehand. There is no indication in the document that the EPA and MDEQ came to a consensus and that the RDWP will be submitted at a later date.

**General Comment No. 7:** The information presented in Worksheet #10 of the UFP QAPP is not a conceptual site model (CSM).

**MDEQ response:** *Inclusion of a CSM in the PDIWP is not required in the FRESOW and the CSM is typically presented in the RI Report and included in the ROD, but an existing CSM is not available for the Blacktail Creek Riparian Actions site.*

**Further EPA Comment:** Inclusion of a CSM may not be specifically stated as a requirement in the Further Remedial Elements Scope of Work (FRESOW), but it is a required element of the UFP QAPP. Moreover, the CSM is a fundamental component of the remedial process that is carried through the remedial investigation, remedial design, and remedial action. The CSM is the basis for developing DQOs for any data collection event that is performed during and throughout the remedial process from investigation through final remediation. The CSM provides the basis for any data collection by stating what is understood about the site contamination and what is not understood about the site contamination (data gaps). This information is used to develop the DQOs for the data collection event.

Despite MDEQ's response and reasoning that the FRESOW did not require a CSM in the UFP QAPP, what is presented in Worksheet #10 of the Draft Final UFP QAPP is a sufficient CSM. Worksheet #10 presents a detailed narrative including previous investigations, data gaps (reference to Section 2.4 of the PDIWP), environmental setting and waste and contamination background. This information provides for an adequate CSM for the purposes of developing DQOs for the Pre-Design Investigation.

### **Specific Comments:**

#### **PDIWP**

**Specific Comment No. 1:** List of Acronyms and Abbreviations. The acronyms "DEQ" and "MDEQ" are both included in the acronym list. For clarity and consistency, please use one or the other and apply throughout the document.

**MDEQ Response:** *For purposes of clarity and consistency, MDEQ will be used exclusively for Montana Department of Environmental Quality except in Section 2.2 of the PDIWP where text is included from the CD.*

**Further EPA Comment:** DEQ and MDEQ are both still included in the List of Acronyms and Abbreviations. Both Acronyms are stated to mean Montana Department of Environmental Quality.

Acronyms that still need to be addressed:

1. Pg. 73 – References: Montana DEQ
2. Pg. 82-84, 160-163 – Figures: Source: DEQ
3. Pg. 285 – 1.2. Scope/Application: DEQ
4. Pg. 437 – 5.3.3.15: MT DEQ
5. Pg. 672-688 – *Various States* DEQ
6. Pg. 701 – "Task order under DEQ..."
7. Pg. 702 – HASP – Fieldwork Objectives, Tasks, and Equipment: DEQ
8. Pg. 702 – Descriptions and Features: DEQ
9. Pg. 705 – Montana DEQ.

**Specific Comment No. 5:** Section 3.7, Page 3-7. Because this area has been disturbed since the tailings were deposited, there may not be a clear break from impacted to unimpacted. It is recommended that the XRF be used as a guide for impacted soil and proceed 2 to 5 feet into unimpacted material depending on conditions.

**MDEQ Response:** Additional information has been added to Section 3.7 to clarify the XRF procedure in identifying extent and depth of contamination. The XRF will be used to scan the intervals near contamination cutoff depth as described in the response to General Comment #5.

**Further EPA Comment:** Correction states “at least 2 ft into undisturbed native ground”, not the 2 to 5 feet stated in the EPA comments.

**Specific Comment No. 6:** Section 3.7, Borehole Drilling Procedures. A more detailed description of decontamination procedures is needed. For example, what will the wash water applied with the high-pressure washer consist of, Alconox and distilled water?

**MDEQ Response:** HGL SOP No. 411.02 was referenced in this section to clarify decontamination procedures ....

**Further EPA Comment:** MDEQ appropriately referenced HGL SOP No. 411.02 for one of the decontamination procedures (pg. 3-9, 9<sup>th</sup> bullet), but not the other (pg. 3-7, 4<sup>th</sup> bullet).

**Specific Comment No. 7:** Section 3.8.3, XRF Screening Analysis. In the first paragraph, it is stated that a sample stand will be utilized, but no further mention of sample stand usage is mentioned in the work plan or UFP-QAPP. Please specify when the sample stand will be employed. In the second paragraph, EPA is concerned about the usefulness of the results that will be obtained analyzing through the thick plastic core tube with moist or wet samples possibly not in an optimal position for this analysis. Please briefly specify the alternative steps if the COC break in concentrations cannot be identified. In the third paragraph, please specify the sieve size and type that will be used.

*MDEQ Response: Section 3.8.3 has been updated to clarify that sample analysis stands would be used only for the ex-situ/intrusive analysis at the field laboratory. A sample stand designed for analyzing bagged samples or a stand designed for analyzing samples in cups may be used depending on the equipment available for this investigation. The Project Team has experience performing and has completed successful investigations using both types of equipment. Sampling analysis stands are commonly used with XRF units to allow for the XRF unit to be mounted on a stand to allow the user to analyze samples without the requirement of holding the XRF unit and to provide more consistent results, especially while performing duplicate or replicate analyses.*

*The use of core sleeves is no longer proposed for this investigation. Soil cores will be extracted onto trays protected by polyethylene sheeting or other appropriate material as outlined in Section 3.7, but the top will be open for examination and to provide direct access to the soil for in-situ / non-intrusive XRF analysis. A thin plastic sheet or mylar will be used to protect the XRF analyzer window from damage from the soil. Section 3.8.3 has been updated to include #10 sieve information, and additional information on the screening criteria and how the break in COC concentrations will be determined.*

See also response to General Comment #5 for additional information.

**Further EPA Comment:** Paragraph 2: The sampling of the anticipated COC concentrations break zone has been outlined, as appropriate, but alternative steps to be taken if the COC break in concentrations cannot be identified have not been detailed.

**Specific Comment No. 16:** Section 4.3, Laboratory Quality Assurance/Quality Control: The latest version of the EPA CLP SOW should be referenced in this section. SFAM01.1, November 2020. No section on data validation, data quality. Please include.

**MDEQ Response:** *The latest version of the EPA CLP has been referenced in Section 4.3. Additionally, the attachments and appendix numbering have been updated in Section 4.3 to highlight Energy Laboratories, Inc. (ELI)'s Quality Assurance Manual. Laboratory data validation and data quality information can be found in ELI's Quality Assurance Manual in Appendix B of Attachment A of the PDIWP, also known as Appendix B of the UFP QAPP.*

**Further EPA Comment:** The contracted laboratory (ELI in this case) cannot validate the data that it generates. Data validation is to be performed by the lead entity for the specific project. In this case, MDEQ is responsible for performing validation of the data generated for the BTC Riparian Areas Pre-Design Investigation.

**Specific Comment No. 18:** Table 6. The work plan Table 6 indicates plastic bags for the soil samples to be analyzed for metals while worksheets #19 and #30 in the UFP QAPP indicate glass jars. Please clarify.

**MDEQ Response:** *Information related to sample containers/methods has been added to Sections 3.7, 3.8.4, and 3.11.2, and Tables 4 and 5 in the PDIWP, and Worksheets #19 and #30 in the UFP QAPP for purposes of congruency and clarification. To clarify and recap: 4oz amber glass jars will be used to collect preservable samples in the field for mercury analysis basis at the approved analytical laboratory. Glass 4oz amber glass jars will be used to collect samples that are to be analyzed for hydrocarbons in an approved analytical laboratory. Samples of suspected asbestos-containing materials (suspect ACM), if encountered, will be collected with plastic bags by an accredited asbestos sampler to be analyzed in an approved analytical laboratory. Samples for Acid Base Accounting will be collected using plastic one-gallon sized bags. Samples of core at 1-ft intervals for purposes of archiving will be collected into plastic bags and stored in plastic buckets with lids. Samples for ex-situ/intrusive XRF at the field laboratory will be collected into plastic bags and the same plastic bag will be submitted to the laboratory for arsenic, cadmium, copper, lead and zinc analysis. All sample labeling procedures will be followed in accordance with Section 3.8.1 of the PDIWP.*

**Further EPA Comment:** There are still discrepancies noted between Table 5 (which was previously Table 6 in the Draft PDIWP) and Worksheets #19 and #30 of the UFP QAPP. Specifically:

- MDEQ's response is consistent with Table 5 but not Worksheets #19 and #30.

- Worksheets #19 and #30 indicate soil samples collected for metals can be contained in a plastic bag OR 4-ounce glass jar. Whereas, Table 5 indicates soil samples collected for metals can be contained in just a Ziploc bag.
- Worksheets #19 and #30 indicate soil samples collected for mercury can be contained in a plastic bag OR 4-ounce glass jar, where Table 5 indicates soil samples collected for mercury can be contained in just a 4-ounce AMBER glass container.
- Additionally, Table 4, when referring to Mercury Sample Selection, states: “sample three 1-ft intervals (one above and two below contamination) into 4-ounce amber glass jars OR plastic bags.

## UFP QAPP

**Specific Comment No. 8:** Worksheet #12, Section 12.1. The LCS criteria is 70-130% for LCS/LCSD. MS/MSD criteria for mercury is 75-125%.

***MDEQ Response:** See Response to UFP QAPP Specific Comment #7. Worksheet #12.1 has been revised to show the laboratory-specific MQOs for target metals and mercury for soil LCS/LCSDs and MS/MSDs analyzed by SW-846 Methods 6020B and 7471B, respectively.*

**Further EPA Comment:** Mercury is still listed as 80-120% measurement performance criteria (MPC) for both LCS/LCSD and MS/MSD on Worksheet #12.1

**Specific Comment No. 14:** Worksheets #18 and #20. Only XRF samples that have been dried, sieved, and prepared should be used to assess COC concentrations and samples to be submitted to the laboratory. Please revise accordingly.

***MDEQ Response:** Use of XRF analyses has been added to Worksheet #18 and #20 for purposes of clarification and congruency and has been addressed in other locations throughout the PDIWP and UFP QAPP. See also response to General Comment #5.*

**Further EPA Comment:** Although information pertaining to XRF samples and their preparation have been added to the document, it is not clear that this information pertains to assessing COC concentrations on Worksheet #18 or Worksheet #20. Please add text to the tables or footnotes that states that XRF samples to be used to assess COC concentrations and to be submitted to the laboratory for analysis will be dried, sieved, and prepared in accordance with the Ex-Situ (Collected) Sample Preparation procedures detailed in SOP 408.511.

**Specific Comment No. 15:** Worksheets #19 and #30.

- Please indicate which laboratory is being used.
- Please indicate how samples will be delivered to the lab.
- Please include or reference worksheets with the accreditation/certificates held by the chosen laboratory.
- Please indicate the data package turnaround time.

***MDEQ Response:** Worksheets #19 and #30 have been updated to indicate which laboratory is being used, how samples will be delivered, and estimated turnaround times. Additional accreditation/certificates for both labs have been added to Appendix B.*

**Further EPA Comment:** No reference has been made or attached to this document concerning

laboratory accreditation or certificates for asbestos analysis pertaining to PACE (the analytical Laboratory that will be analyzing asbestos), just that the sample collection will be performed by an accredited inspector.

**Specific Comment No. 17:** Worksheet #20. The number of samples being submitted to the laboratory and the field duplicates listed for XRF in PDIWP and UFP QAPP are inconsistent. Please review and revise.

- a. Please indicate which laboratory is being used.
- b. Please indicate how samples will be delivered to the lab.
- c. Please include or reference worksheets with the accreditation/certificates held by the chosen laboratory.
- d. Please indicate the data package turnaround time.

**MDEQ Response:** *Sample quantity and analysis information has been updated throughout the UFP QAPP and PDIWP to be congruent.*

**Further EPA Comment:** Although information pertaining to XRF samples and their preparation have been added to the document, it is not clear that this information pertains to assessing COC concentrations on Worksheet #20. Please add text to the table or footnotes that states that XRF samples to be used to assess COC concentrations and to be submitted to the laboratory for analysis will be dried, sieved, and prepared in accordance with the Ex-Situ (Collected) Sample Preparation procedures detailed in SOP 408.511.

**Specific Comment No. 18:** Worksheet #21.

- a. What do the reference numbers used in this table refer to? They do not appear on the SOPs included in Appendix A or in the bookmarks for this document. Also, the SOPs in Appendix A are not listed in the same order as included in the table.
- b. SOP 403.01 is not included in Appendix A. This SOP is for hydrocarbon sampling, unclear if this is needed or not.
- c. The footnote is not used in the table.
- d. A SOP is included for DPT, however no SOPs are included for sonic drilling or Vibracore. Please review drilling methods and include necessary SOPs.

**MDEQ Response:** *The reference numbers on Worksheet #21 are reference numbers used in conjunction with Worksheet #18. See Worksheet #18 and footnote 3 for further clarification. The SOPs have been reorganized. Vibracore drilling has been eliminated from the plan. The footnote has been added to the HGL SOP 408.511 XRF Screening Procedures title. EPA Method 600 has been added to guide asbestos sampling in the field by an accredited asbestos sampler. New BTC-specific HGL sonic drilling soil sampling and VOC/VPH soil sample collection SOPs have been added to the UFP QAPP. It has come to our attention that the ELI SOP field sampling has been discontinued. Consequently, ELI SOP field sampling has been removed from Worksheet #21 and will not be provided in Appendix A of the UFP QAPP.*

**Further EPA Comment:**

- b. SOP 403.01 – Soil Sample Collection (for use if hydrocarbons suspected) is not included in Worksheet #21 or in Appendix A.

**Specific Comment No. 23:** Worksheet #37: The data usability assessment must be performed in accordance with the Clark Fork River Superfund Site Investigation (CFRSSI) guidance documents, methods and procedures.

***MDEQ Response:** Worksheet #37 has been updated with a reference that indicates this project will perform data usability assessments in accordance with Clark Fork River Superfund Site Investigation (CFRSSI) guidance documents, methods and procedures, including the procedures for assessing the usability of existing data.*

**Further EPA Comment:** In accordance with CFRSSI guidance, the data usability assessment must culminate in designating each data point as enforcement quality, screening quality, or rejected. Please update Worksheet #37 to include the data usability designation.

**Specific Comment No. 25:** Figure 18.1: The difference between Sonic Priority 1 and Sonic Priority 2 sampling locations is not clear. These sampling techniques/procedures need to be clearly described in the UFP QAPP.

***MDEQ Response:** The defined difference between Sonic Priority 1 and Sonic Priority 2 sampling locations has been added to the Introduction of the UFP QAPP. To further clarify, Priority 1 and Priority 2 sample locations will not differ in method, but rather Priority 2 borings may be canceled if sufficient data to accurately depict bottom of tailings is collected in Priority 1 borings. MDEQ and HGL PM will ultimately decide whether a suitably accurate excavation depth can be made with data collected. If core recovery is good enough at the Priority 1 locations and the anticipated depths can be defined well enough for design purposes, the Priority 2 borings would not be necessary. It is possible that some Priority 2 borings will be necessary.*

**Further EPA Comment:** The differences between Sonic Priority 1 and Sonic Priority 2 have been clarified in the revised UFP QAPP. For further clarification in Figure 18.1, however, please consider using colors (not bright yellow and green) that aren't so similar to mark Sonic Priority 1 and Sonic Priority 2 in this Figure.

## **Additional Comments**

### **PDIWP**

Section 3.8.3, last paragraph. In reference to core samples, the units for measure jump between the international system of units (SI units - kilogram, milliliter, etc.) and British Imperial (pound, foot, etc.). Please use one system of measure.

### **UFP QAPP**

Worksheet #10, Page 12, 1<sup>st</sup> paragraph. See Further EPA Comment to General Comment No. 7. Inclusion of a CSM may not be specifically stated as a requirement in the FRESOW, but it is a required element of the UFP QAPP. Moreover, the CSM is a fundamental component of the remedial process that is carried through the remedial investigation, remedial design, and remedial action. The CSM is the basis



for developing DQOs for any data collection event that is performed during and throughout the remedial process from investigation through final remediation. Please remove the first paragraph of Worksheet #10.

Worksheet #11, Page 22, Number 4, 1<sup>st</sup> paragraph. Please define “contamination horizon”.

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

Sincerely,

Nikia Greene  
Remedial Project Manager

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