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Summer 6-26-2023

**Approval for the Request for Change BG-2023-01 to Final BPSOU Hydrocarbon Sampling and Treatability Study, Quality Assurance Project Plan (QAPP) (dated May 15, 2023)**

Nikia Greene

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**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8, MONTANA OFFICE**

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Ref: 8MO

June 26, 2023

Mr. Josh Bryson  
Liability Manager  
Atlantic Richfield Company  
317 Anaconda Road  
Butte, Montana 59701

**Re: Approval for the Request for Change BG-2023-01 to Final BPSOU Hydrocarbon Sampling and Treatability Study, Quality Assurance Project Plan (QAPP) (dated May 15, 2023)**

Dear Josh:

The U. S. Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), is approving the *Request for Change BG-2023-01 to Final BPSOU Hydrocarbon Sampling and Treatability Study, Quality Assurance Project Plan (QAPP) (dated May 15, 2023)* with the following comments that need to be addressed in the evaluation report. Please attached the approval page and submit as final.

**Specific Comments**

1. Please clarify/summarize the homogenization techniques when presenting the results. SOP SS-6 Compositing Soil Samples (included in the Hydrocarbon QAPP) calls for mixing the subsamples in a stainless steel bowl with a stainless spoon. Some VOC losses should be expected during compositing, and this should be discussed when the results are presented. More elaborate and effective compositing techniques are presented in ITRC's Incremental Sampling Guidance (ISM-2) which should be considered in the future when sampling for and compositing inorganics. The sampling results from the 2022 Hydrocarbon Treatability Study (Table 10a of Attachment G of Appendix A of the BG 60% Remedial Design Report) shows that the variability between a natural sample and a duplicate sample collected at the same time are not nearly as much as the difference between the field sample analyses (April 20, 2022) and the analyses performed by ReResolution Partners, LLC (May 23, 2022). This should also be discussed in the evaluation report.
2. When the results are presented, please provide plots with error bars around the initial sample means and the treated samples (using standard deviation calculated from the three analyses).

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

Sincerely,

Nikia Greene  
Remedial Project Manager

Attachment: EPA and DEQ signature page

Butte File  
Chris Greco / Atlantic Richfield  
Josh Bryson / Atlantic Richfield  
Mike Mc Anulty / Atlantic Richfield  
Loren Burmeister / Atlantic Richfield  
Dave Griffis / Atlantic Richfield  
Jean Martin / Atlantic Richfield  
Irene Montero / Atlantic Richfield  
David A. Gratson / Environmental Standards  
Mave Gasaway / DGS  
Adam Cohen / DGS  
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Daryl Reed / DEQ  
Amy Steinmetz / DEQ  
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