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Spring 4-16-2024

Re: Comments on the Repository and Haul Route Geotechnical Pre-Design Investigation Work Plan (dated March 29, 2024), Repository and Proposed Haul Route – Silver Bow Creek Conservation Area Quality Assurance Project Plan (dated March 29, 2024), and Silver Bow Creek Conservation Area Repository Data Gap Quality Assurance Project Plan (dated March 22, 2024)

Emma Rott

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REGION 8

DENVER, CO 80202

April 16, 2024

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

Re: Comments on the Repository and Haul Route Geotechnical Pre-Design Investigation Work Plan (dated March 29, 2024), Repository and Proposed Haul Route – Silver Bow Creek Conservation Area Quality Assurance Project Plan (dated March 29, 2024), and Silver Bow Creek Conservation Area Repository Data Gap Quality Assurance Project Plan (dated March 22, 2024)

Dear Mr. Bryson:

The U. S. Environmental Protection Agency (EPA), in consultation with the Montana Department of Environmental Quality (DEQ), is providing comments on three documents received from Atlantic Richfield Company (AR):

- Repository and Haul Route Geotechnical Pre-Design Investigation Work Plan dated March 29, 2024 (hereafter “Work Plan”) and the appended.
- Repository and Proposed Haul Route – Silver Bow Creek Conservation Area Quality Assurance Project Plan dated March 29, 2024 (hereafter “Haul Route QAPP”).
- Silver Bow Creek Conservation Area Repository Data Gap Quality Assurance Project Plan dated March 22, 2024 (hereafter “Data Gap QAPP”).

Please address the comments below, the comments in the crosswalks, and submit revised versions of the subject documents for EPA and DEQ review and approval, prior to commencement of the field investigations.

General Comments:

1. While EPA understands that the general purpose of the three submitted documents is to support the ongoing Repository Siting Study as summarized in the accompanying transmittal letters, the submitted documents do not provide enough context for the intended use of the data with respect to the Community Engagement Process (EPA 2020) or Remedial Designs and/or Pre-Design Investigations as outlined in Appendix D of the Butte Priority Soils Operable Unit Consent Decree. Both documents should be updated to include a section(s) clearly outlining the purpose of the data collection, the intended use of the results, and the process workflows that the documents are part of (e.g., these documents are part of the Community Engagement Process, and/or Remedial Designs). This can explain how the data will be used to support community engagement

and acceptance, as well as a summary of the remedial design(s).

2. Step 5 of the Community Engagement Process Document (EPA 2020) includes development of a work plan for each Repository Site (identified in the Screening Study – Step 4). A work plan should be developed for each potential repository location. Work Plan elements include geotechnical characterization and material characterization; however, they should also identify, and address potential limiting factors to the identified repositories and develop metrics for assessing fatal flaws. Several criteria may be completed with desktop analyses. These may include investigation and/or determination of:
 - Repository capacity to accept waste
 - Are there other anticipated contaminated wastes/materials that need to be accounted for in the repository design?
 - Existing infrastructure (power, gas, water, etc.) and topographic surveys
 - Groundwater, stormwater, biota, and surface water monitoring (as required)
 - Slope stability and earthquake analysis (Geotech investigation)
 - Impacts to nearby residences/community acceptance
 - Access, road, and haul route improvements
 - Traffic and road impacts, anticipated pipeline corridor impacts
 - Wetland survey (as required)
 - Cultural Resources/Historical Resources
 - Green remediation and future land use analysis

Please describe why a RDWP has not been developed for each location and when that may be anticipated.

3. The data quality objectives (DQOs) included in both the Work Plan and Haul Route QAPP and the Data Gap QAPP are insufficient for identifying the goals of the study, determining if the collected data will be sufficient to answer principal study questions, and describing the purpose of the analytical approaches and the performance criteria.
4. What about Blacktail Creek Remediation and Contaminated Groundwater Hydraulic Control? DEQ is responsible for the excavation of materials, however according to the Consent Decree, the settling defendants are responsible for identifying a repository to receive waste (Section 5.1.1 of Appendix D to the Consent Decree Statement of Work). The QAPPs should be updated to determine how identified material volumes from Blacktail Creek will be integrated into the remedial design for the repository analyses.

Work Plan and Haul Route QAPP General Comments:

5. The Haul Route QAPP DQOs suggest that data will be evaluated against “engineering requirements” – these requirements should be presented in the Work Plan and clearly define the purpose for data gathering.
6. The DQOs should be expanded to describe why the geotechnical parameters are necessary characterization data and how that data will be used to support remedial designs for the RA sites and for potential repository locations.
7. While the Work Plan and Haul Route QAPP is focused on onsite technical consideration; the Work Plan should be expanded to include a conceptual level repository design (independent of specific location) that includes such considerations as repository volume needs, slurry conveyance, upset conditions, potential site and subgrade preparation needs, stockpile and/or staging, waste placement considerations including repository thickness and/or slope grading, stormwater and

erosion BMPs, waste placement, and cover evaluation. The conceptual level repository design would be supportive of development of DQO problem statements, characterization data needs, and data quality assessment, as well as form the basis for community engagement and acceptance.

Work Plan and Haul Route QAPP Specific Comments:

8. The Work Plan specifies hydrocarbon-impacted soils will be segregated and transported to the Butte Mine Waste Repository for treatment within a land farm. How will hydrocarbon-impacted soils be identified from the respective RA sites?
9. Several boreholes are tentatively identified for piezometer installation if groundwater is encountered during the investigation. If groundwater is discovered, up to 2 monitoring wells on each site generate enough data as groundwater surfaces are typically calculated with a minimum of 3 data points. If piezometers are installed, how long and how often will monitoring continue to provide sufficient data? Would piezometers be monitored for water levels or would other sampling and/or measures be completed. Project DQOs should be expanded to describe the analytical approach.
10. Please update figures to include a legend. Points of Reference should also be included on figures (e.g., street names and/or reference locations for Figure 1).
11. Figure 3 should be expanded to include BH24-09 as it is part of the planned slurry conveyance system. Update the figure with the proposed slurry pipeline corridor to the Berkeley Pit to show relative to borehole samples.
12. Section 3.3 first bullet: Kelley Repository Areas C and E states, “Up to two of these borings may be converted to piezometers if groundwater is encountered with overburden material”. The New Shields Avenue Repository Area bullet states, “One of these borings may be converted to a piezometer if groundwater is encountered within the overburden material”. Third paragraph from the end states, “Piezometers are proposed at select borehole locations.” Please have consistency for installation of piezometers throughout the document.

Data Gap QAPP General Comments:

13. The Data Gap QAPP is focused on onsite technical characterization of wastes several questions on the delineation and extent of wastes should be outlined. EPA has not received a workplan associated with this work, however, the workplan should include a discussion on each location and what constitutes delineation of impacted material. The discussion of delineation would be supportive of development of DQO problem statements, characterization data needs, and data quality assessment, as well as form the basis for community engagement and acceptance.
14. The Data Gap QAPP should include soil sampling and analysis for hydrocarbons to characterize all soils that may potentially be disposed in the Berkeley Pit. Also, please provide a conceptual design plan for potential land treatment unit for hydrocarbon waste including haul routes, infrastructure, booster station, and alignment. The plan should include a figure showing the location of a potential hydrocarbon land farm treatment.

Data Gap QAPP Specific Comments:

15. Section 1.2, activities bullets: the second bullet states that samples will be collected to 5-feet below the anticipated bottom of excavation. What is that depth and what will be the determining criteria for establishing that depth?
16. Section 1.2, 4th bullet, please clarify, and provide additional information on the previous studies within BRW, DE, NST sites. It is unclear as to when these investigations were conducted and what

media are available for further data analysis. Will previous analyses be used to support the goals of this study?

If you have any questions or concerns, please call me at (406) 438-0823.

Sincerely,

Emma Rott
Remedial Project Manager

ENCLOSURES

1. EPA Crosswalk for the Repository and Proposed Haul Route – Silver Bow Creek Conservation Area Quality Assurance Project Plan
2. EPA Crosswalk for the Silver Bow Creek Conservation Area Repository Data Gap Quality Assurance Project Plan

cc: (email only)

Butte File
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Josh Bryson / Atlantic Richfield
Loren Burmeister / Atlantic Richfield
Dave Griffis / Atlantic Richfield
Jean Martin / Atlantic Richfield
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