



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 30, 2023

Mary Young, LM Site Manager  
U.S. Department of Energy Office of Legacy Management  
2597 Legacy Way  
Grand Junction, CO 81503

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION'S STAFF REVIEW OF THE  
JUNE 2023 WORK PLAN DISPOSAL CELL PORE-WATER SOURCES  
INVESTIGATION FOR THE RIFLE, COLORADO, DISPOSAL SITE

Dear Mary Young:

The U.S. Nuclear Regulatory Commission (NRC) staff is writing in response to the U.S. Department of Energy (DOE) document entitled, "Work Plan Disposal Cell Pore-Water Sources Investigation for the Rifle, Colorado, Disposal Site," dated June 2023, (Agencywide Documents Access and Management System [ADAMS] Package Accession No. ML23167A353). The following comments and questions are provided:

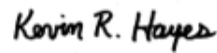
- Section 4.2.3, Perform a Subsurface Investigation for Areas Adjacent to and Upgradient of the Disposal Cell and Install Piezometers and Additional Observation Wells, states that piezometers will be installed in borings where saturated conditions are encountered to monitor elevation of groundwater adjacent to the cell within the unconsolidated material. How can the soil and rock conditions observed during drilling (soil moisture, mottling, mineral precipitation, potential perched zones on low conductivity soils and rock, etc.) be used to guide the installation of piezometers, soil moisture probes, or associated instrumentation in the areas adjacent to and upgradient of the disposal cell?
- In the process of reviewing the work plan, I also reviewed the March 2023 LM National Lab Network Collaboration: Rifle, Colorado, Disposal Site (ML23081A057) prepared for the DOE-LM. In Section 2.5, Unique Features of the Rifle Disposal Site, the March 2023 collaboration document mentions evidence suggesting the presence of one or more north-south oriented paleochannels within the alluvium underlying and adjacent to the disposal cell footprint. Further review of a March 1992 site document, Evaluation of Surficial Soil and Rock Foundation Conditions, Estes Gulch Disposal Cell, UMTRA Project – Rifle (ML23293A248), indicates in Section 3.1.2, Paleochannel, the presence of a paleochannel at the mid-section of the south end of the disposal cell, in the vicinity of boreholes MBH-10, MBH-10B, and MBH-11. Additionally, although not mentioned in the previously listed section, test pit logs in Appendix C of the document indicate that probable paleochannel deposits were logged in the alluvium encountered in the MTP-7B and MTP-12 test pits. The test pits were located further north (upslope) within the cell footprint at reported elevations of 6,086.4 feet and 6,087.5 feet, respectively. Will the geophysical and drilling

investigations proposed in the work plan provide coverage of these areas and adjacent areas for evaluation of potentially highly permeable paleochannel deposits within the alluvium underlying and adjacent to the cell footprint?

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "[Public inspections, exemptions, requests for withholding](#)," of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's ADAMS. ADAMS is accessible from the NRC Web site at <https://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning the NRC review of the work plan, please contact me at 301-415-0549 or by email at [Kevin.Hayes@nrc.gov](mailto:Kevin.Hayes@nrc.gov).

Sincerely,



Signed by Hayes, Kevin  
on 11/30/23

Kevin R. Hayes, P.G., CPG, Hydrogeologist  
Uranium Recovery and Materials  
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Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
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Docket Numbers:  
WM-00062

cc: Gunnison  
ListServ List

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U.S. Nuclear Regulatory Commission's Staff Review of the June 2023 Work Plan Disposal Cell Pore-Water Sources Investigation for the Rifle, Colorado, Disposal Site DATE November 30, 2023

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DATE	Nov 30, 2023	Nov 30, 2023	Nov 30, 2023	

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