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June 8, 2023

Arturo Duran  
Designated Agency Manager  
Department of Energy-EM  
1200 Trinity Drive, Suite 400  
Los Alamos, New Mexico 87544

**RE: APPROVAL WITH MODIFICATIONS**

**DRILLING WORK PLAN FOR GROUNDWATER REGIONAL AQUIFER MONITORING WELL R-76  
(REPLACEMENT OF GROUNDWATER REGIONAL AQUIFER MONITORING WELL R-28), REVISION 2  
LOS ALAMOS NATIONAL LABORATORY  
EPA ID#NM0890010515  
HWB-LANL-22-019**

Dear Arturo Duran,

The New Mexico Environment Department (NMED) has received the United States Department of Energy (DOE) *Drilling Work Plan for Groundwater Regional Aquifer Monitoring Well R-76 (Replacement of Groundwater Regional Aquifer Monitoring Well R-28), Revision 2* (Revision 2) dated and received on May 31, 2023 and referenced by EM2023-0312. DOE submitted Revision 2 in response to the informal technical comments issued by NMED in April 2022 and June 2022 (Revision 1) (Comments). The Comments were issued by NMED to DOE following NMED's review of DOE's *Drilling Work Plan for Groundwater Regional Aquifer Monitoring Well R-76 (Replacement of Groundwater Regional Aquifer Monitoring Well R-28) Revision 1* (Work Plan) and were issued in general accordance with the process outlined in Section XXIII of the 2016 Order on Consent (CO). The original Work Plan was submitted to NMED by DOE on March 17, 2022 in fulfillment of Fiscal Year 2022 (FY2022) Milestone No. 8.

Revision 2 removed any reference to the deeper screen that was originally presented in the Work Plan and was also included in Revision 1. NMED will still require a well near R-76 that is appropriately drilled and completed in the Chamita Formation (TCar) in accordance with New Mexico Office of State Engineer Regulations. NMED requires that all future drilling work plan submittals for locations in which NMED requires data points at two depths that are revised to a cluster of single-screen wells include a discussion of the necessity for a future cluster well that fulfills the second data gap requirements. Please provide the approximate schedule for completion of the second cluster well and discuss the priority of the other well with an approximate schedule.

NMED has reviewed Revision 2 and approves the revision with modifications. The required modifications that DOE must implement for the approval of FY2022 Milestone No. 8 to be valid are provided in the following narrative.

**1. Primary Objectives and Purpose, Page 1.**

**DOE Statement:** An additional objective for R-76 is to characterize the vertical extent of the contamination in the same area of the plume by drilling a borehole to a depth within the Chamita Formation (TCar).

**NMED Modification:** The proposed single-screen well is to be installed in the pumiceous Puye Formation (Tpf(p)) near the same elevation as the screen from R-28. It is not necessary to drill into the Chamita Formation for this well depth. However, NMED requires that DOE submit an additional work plan for a secondary cluster well near R-76 that fulfills the requirement to characterize the vertical extent of contamination, including the approximate schedule for completion.

**2. Drilling Approach, Page 2.**

**DOE Statement:** The pumiceous Puye Formation is estimated at approximately 935 ft bgs, the Miocene pumiceous deposits is estimated at approximately 952 ft bgs, and the Chamita Formation is estimated at approximately 1017 ft bgs. The total depth of the borehole is estimated at 1080 ft bgs, approximately 63 feet into the Chamita Formation.

**NMED Modification:** The proposed single-screen well is to be installed in the pumiceous Puye Formation (Tpf(p)) near the same elevation as the screen from R-28. It is not necessary to drill into the Chamita Formation for this well depth.

**3. Water Quality Sampling, Page 4.**

**DOE Statement:** *“Samples from each of these zones will be analyzed for dissolved major cations and anions, fluoride, bromide, low-level perchlorate, TOC, low-level tritium, and metals/trace elements. These samples will also be provided to NMED, managed under NMED chain-of-custody protocols.”*

**NMED Modification:** As instructed in the Comments, Revision 2 should have included a text that states that screening water-quality samples splits will be provided to NMED under NMED chain of custody protocol and that DOE will make the drill site safe and accessible for two NMED personnel at a time to collect their own screening-level groundwater samples during active drilling operations. As with the recent drilling at R-73, DOE must allow for NMED to collect their own groundwater samples, or for DOE to do so under NMED chain-of-custody protocol.

If you have any questions regarding this letter, please contact Michael Petersen (505) 690-5107.

Sincerely,

**Rick Shean**

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Rick Shean  
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File: 2023 LANL, Drilling Work Plan for Groundwater Regional Aquifer Monitoring Well R-76 (Replacement of Groundwater Regional Aquifer Monitoring Well R-28), Revision 2, May 2023  
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