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**EMID-701090  
Rec'd 11/4/20**

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

November 3, 2020

Arturo Q. Duran  
Compliance and Permitting Manager  
Environmental Management  
U.S. Department of Energy  
Los Alamos Field Office  
P.O. Box 1663 MS M984  
Los Alamos, NM 87544

**RE: AMENDED APPROVAL LETTER  
DRILLING WORK PLAN FOR CHROMIUM GROUNDWATER PROJECT  
REGIONAL AQUIFER MONITORING WELL R-71  
LOS ALAMOS NATIONAL LABORATORY  
EPA ID #NM0890010515  
HWB-LANL-20-009**

Dear Mr. Duran:

The New Mexico Environment Department (NMED) approved the United States Department of Energy (DOE) *Drilling Work Plan for Chromium Groundwater Project Regional Aquifer Monitoring Well R-71* (Work Plan), referenced by EM2020-0026 on March 26, 2020. The March 26<sup>th</sup> approval was based upon the April 18, 2019 and the November 5, 2019 technical team meetings between NMED and DOE. However, during recent technical team meetings, issues regarding the design and purpose of R-71 have surfaced which are of concern to NMED. To clarify our technical position for R-71, NMED issues this amendment to the March 26<sup>th</sup> approval letter.

Regarding the purpose and design for R-71, the Work Plan states on page 1:

- *“The primary objective for R-71 is to further characterize the lateral and vertical extent of chromium contamination in the northwestern portion of the chromium plume”.*
- *“... the monitoring data collected from R-71 will bound the northwestern extent of chromium contamination...”.*
- *“Because of the potential for using R-71 as a remediation well in the future, it may be appropriate to balance the objectives of shorter screen lengths (nominally approximately 20 ft) with longer screens (e.g., 30–40 ft), which can provide good integrated characterization information and also result in better injection or extraction hydraulics.”*

The Work Plan also specifies that NMED will approve the final well design at the time of drilling. Consequently, the final design was excluded from the March 26<sup>th</sup> approval letter. NMED is amending the approval of the Work Plan to specify that the screen lengths for R-71 must not be longer than 20 feet. This is because the excessively long screens proposed by DOE, to allow for repurposing later as part of remediation infrastructure, will negate the ability of R-71 to meet its primary objective.

Proper evaluation of subsurface conditions is entirely dependent upon the ability of the monitoring well network to provide representative groundwater data that are necessary to perform the scientific studies, aquifer testing and to conduct the corrective measures evaluation required by the Compliance Order on Consent. While NMED recognizes DOE's concern of the drilling costs, NMED does not concur with DOE's repurpose design for R-71 for the following technical reasons:

- U.S. EPA guidelines limit monitoring well screen lengths to between 2 feet and 20 feet.
- The highly layered nature of the regional aquifer geology mandates discrete sample intervals.
- The potential for sample dilution from the penetration of different geologic strata.
- The potential to spread contamination from one geologic stratum to other geologic strata.
- The potential for the sample to reflect conditions from a stratum of unknown stratigraphic position in the aquifer.
- The loss of the ability to compare its data to data from properly designed existing monitoring wells, specifically R-62 and R-43.
- The potential to jeopardize the final remediation design by using misrepresented data.
- The suspect anomalous result obtained from screen 1 at R-70; the only repurpose well design with a screen exceeding 20 feet (screen 1 is 40 feet long).
- There is no approved remediation strategy at the northwest portion of the plume that justifies the repurpose design proposed by DOE for R-71.
- The need for a properly designed monitoring well at the R-71 location during remediation.

Lastly, NMED requires that DOE submit a detailed aquifer-performance testing plan for R-71 based on the numerous issues NMED identified in the May 7, 2020 draft comment letter and the outcome of the September 8, 2020 technical team meeting concerning the aquifer testing procedure, analyses and conclusions drawn by DOE for monitoring well R-70. Submittal and approval of a detailed aquifer-performance testing plan will provide greater assurance that conclusions can be relied upon for plume characterization and remedy development. This will also provide critical information for selection of the final remediation approach. NMED also requires that DOE provide the geophysical logs it intends to run. NMED requires at a minimum that flowmeter "spinner" logs and water quality profiling be conducted in the open borehole for characterization and optimal screen placement.

In conclusion, as discussed during technical meetings, NMED is amending the approved Work Plan for monitoring well R-71 to require a screen length of no more than 20-feet.

If you have any questions regarding this correspondence, please contact Christopher Krambis at (505) 476-3078.

Sincerely,

**Kevin  
Pierard** Digitally signed by  
Kevin Pierard  
Date: 2020.11.03  
15:07:25 -07'00'

Kevin M. Pierard, Chief  
Hazardous Waste Bureau

Cc w/out Attachment:

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File: Reading and LANL 2020, TA-05 Amended Approval for Drilling Work Plan for Regional Well R-71  
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