



March 28, 2022

Arturo Duran, Designated Agency Manager
Environmental Management, U.S. Department of Energy
Los Alamos Field Office
1200 Trinity Drive, Suite #400
Los Alamos, New Mexico 87544

RE: REVIEW

**2021 ANNUAL LONG-TERM MONITORING AND MAINTENANCE REPORT FOR THE CORRECTIVE MEASURES
IMPLEMENTATION AT FORMER 260 OUTFALL AREA
LOS ALAMOS NATIONAL LABORATORY
EPA ID#NM0890010515
HWB-LANL-21-055**

Dear Arturo Duran:

The New Mexico Environment Department (NMED) received the United States Department of Energy (DOE) submittal titled *2021 Annual Long-Term Monitoring and Maintenance Report for the Corrective Measures Implementation at Former 260 Outfall Area (Report)* on September 27, 2021. The Report is dated September 2021 and is referenced by EM2021-0468. NMED reviewed the Report and has the following comments:

General Comments

1. The intent of the Report is to fulfill the requirements of the 2017 long-term monitoring and maintenance plan (LTMMP). The LTMMP requires monitoring activities be conducted on a semiannual basis to assess the long-term effectiveness of the corrective measures implementation (CMI) at the Consolidated Unit 16-021(c)-99 within Technical Area 16 (TA-16) and to continually evaluate the conceptual model of the fate and transport of residual contamination in springs, surface water, and alluvial groundwater. The Report states in several sections that contaminant concentrations are declining. NMED notes that the Report does not provide evidence to support these statements. To meet the requirements of the LTMMP, DOE must either validate such statements with a trend analysis or remove these statements from the Report and all future submittals unless the statement can be substantiated.
2. On November 23, 2021, DOE reported the first exceedance of RDX at Bulldog Springs in the *Monthly Notification of Groundwater Data Reviewed in November 2021 (Notification)*. The Notification indicated that an unfiltered sample collected on September 14, 2021, was measured at 11.8 µg/L, exceeding the Table A-1 NMED tap water screening level of 9.66 µg/L. While this detection is not covered in the monitoring period described in the Report, the LTMMP requires DOE to revise the conceptual fate and transport model and propose a path forward to remedy this exceedance in the next submittal due September 2022, if the exceedance persists through the subsequent sampling period to the Report.

Specific Comments

1. Section 1.2 Conceptual Model for Transport of RDX and Barium, Page 2

DOE Statements: *"A review of the concentrations of RDX detected in alluvial monitoring wells indicates long-term declines." and "Although the majority of RDX concentrations in discharges from SWSC, Burning Ground, and Martin Springs and 16-61439 (PRB alluvial seep) from 2000 to 2020 were above the 9.66- $\mu\text{g/L}$ screening level, overall concentrations are declining, likely because of the RDX source-reduction actions that were implemented at Outfall 260 (LANL 2017, 602597)."*

NMED Comment: No evidence of long-term declines in contaminant concentration at any of the sample locations cited in these passages was provided in the Report. DOE must either remove these and all similar statements from the Report and from future submittals or provide a trend analysis such as the Mann-Kendall Test for each sampling point shown in Figures 4.1-1 through 4.2-6 to validate the statements. Trend analyses should be made on pre- and post CMI data separately. See General Comment No. 1.

2. Section 2.2 Results, Page 5

DOE Statement: *"All validated analytical results are provided in Appendix B (on CD included with this document)."*

NMED Comment: Appendix B should include the laboratory electronic data deliverable (EDD) file.

3. Section 2.3 Deviations, Page 6

DOE Statement: *"...many of the locations to be sampled were dry or did not have sufficient water to enable collection of a sample."*

NMED Comment: All locations scheduled for sampling during both events that were either dry or had insufficient amounts of water for sampling in Section 2.3, must be specified in the Report, preferably in a bulleted format. NMED notes that although this information is provided in the Report, NMED had to search the entire text (Sections 1.2 and 4.1), Tables 2.1-2, 2.2-1 and 2.2-2 and Appendices A and B to find this information.

4. Section 4.0 Discussion and Conclusions, Page 7

DOE Statement: *"In addition, this section describes other analytes (e.g., iron, manganese, and boron) detected above their respective screening levels and how these relate to the conditions in the alluvial groundwater."*

NMED Comment: The other analytes provided in the Report do not include aluminum and perchloroethylene as in the previous submittal. Such a change from the previous monitoring period should be discussed in Section 4.3 of the Report.

5. Section 4.1 RDX, Page 8

- a. **DOE Statement:** *"Plate 1 shows the spatial distribution of RDX across Cañon de Valle since the*

completion of the CMI.”

NMED Comment: In Plate 1, provide RDX trend plots for Bulldog Spring and Pajarito below S&N Ancho E basin confluence as in Figure 4.1-4.

- b. **DOE Statement:** “Concentrations of RDX in alluvial monitoring wells continue to show long-term declines.”

NMED Comment: See General Comment No. 1 and Specific Comment No. 1.

- c. **DOE Statement:** “RDX concentrations for the March 2021 sampling result in water from Burning Ground Spring, and Martin Spring, as well as PRB alluvial seep (16-61439), are above the 9.66- $\mu\text{g/L}$ screening level but are steadily declining.”

NMED Comment: See General Comment No. 1 and Specific Comment No. 1.

6. Section 4.2 Barium, Page 9

DOE Statement: “Plate 2 shows the spatial distribution of barium across Cañon de Valle segments 1 and 2 since the completion of the CMI.”

NMED Comment: In Plate 2, provide barium trend plots for Bulldog Spring and Pajarito below S&N Ancho E basin confluence in Pajarito Canyon as in Figure 4.2-4, and Martin Spring and alluvial monitoring wells MSC-16-06293 and MSC-16-06294 in S-Site Canyon as in Figure 4.2-3.

This review is based solely on the information presented in the Report and this letter does not constitute an approval by NMED. Please respond to NMED comments and submit a revised Report within 30-days of receipt of this letter.

Should you have any questions regarding this correspondence, contact Christopher Krambis (505) 231-5423.

Sincerely,

Rick Shean

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Rick Shean
Chief
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