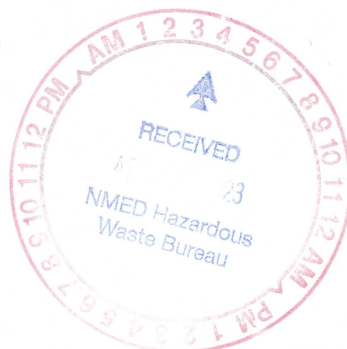




DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-23-BF196-2-1

Mr. Rick Shean
Acting Bureau Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313



April 17, 2023

Subject: Response to New Mexico Environment Department Comments on the 2022 Annual Periodic Monitoring Report for the General Surveillance Monitoring Group: Los Alamos and Pueblo Canyon, Mortandad and Sandia Canyon, Water Canyon/Cañon de Valle, Ancho Canyon, White Rock Canyon, and Pajarito Canyon Watersheds, Dated March 15, 2023

Dear Mr. Shean:

Enclosed please find two hard copies with electronic files of the “Response to New Mexico Environment Department Comments on the 2022 Annual Periodic Monitoring Reports for the General Surveillance Monitoring Group: Los Alamos and Pueblo Canyon, Mortandad and Sandia Canyon, Water Canyon/Cañon de Valle, Ancho Canyon, White Rock Canyon, and Pajarito Canyon Watersheds, Dated March 15, 2023.” The responses address New Mexico Environment Department (NMED) comments on the report within the 30-day time limit outlined by NMED; a revised report will be provided upon NMED approval of these responses to comments.

If you have any questions, please contact Amanda White at (505) 309-1366 (amanda.white@em-la.doe.gov) or Hai Shen at (505) 709-7600 (hai.shen@em.doe.gov).

Sincerely,

ARTURO DURAN
Digitally signed by
ARTURO DURAN
Date: 2023.04.13
17:26:52 -06'00'

Arturo Q. Duran
Compliance and Permitting Manager
U.S. Department of Energy
Environmental Management
Los Alamos Field Office

Enclosure(s):

1. Two hard copies with electronic files:
Response to New Mexico Environment Department Comments on the 2022 Annual Periodic Monitoring Reports for the General Surveillance Monitoring Group: Los Alamos and Pueblo Canyon, Mortandad and Sandia Canyon, Water Canyon/Cañon de Valle, Ancho Canyon, White Rock Canyon, and Pajarito Canyon Watersheds, Dated March 15, 2023 (EM2023-0267)

cc (letter emailed without enclosure[s]):

Lorie King, EPA
Steven Yanicak, NMED-DOE-OB
Siona Briley, NMED-HWB
Neelam Dhawan, NMED-HWB
Caitlin Martinez, NMED-HWB
Michael Peterson, NMED-HWB
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**Response to New Mexico Environment Department Comments on the 2022 Annual Periodic
Monitoring Reports for the General Surveillance Monitoring Group: Los Alamos and
Pueblo Canyon, Mortandad and Sandia Canyon, Water Canyon/Cañon de Valle, Ancho Canyon,
White Rock Canyon, and Pajarito Canyon Watersheds,
Dated March 15, 2023**

INTRODUCTION

To facilitate review of this response, the New Mexico Environment Department's (NMED's) comments are included verbatim. The U.S. Department of Energy (DOE) Environmental Management Los Alamos Field Office responses follow each NMED comment.

SPECIFIC COMMENTS

NMED Comment

1. Section 2.1 PME Observations and Deviations from Planned Scope, page 6:

***NMED Comment:** Additional details in this Section need to be provided. Provide detailed descriptions of the types of deviations, causes, and any steps taken to prevent re-occurrence. It is not sufficient to simply reference Table 2.1-1, (see comments related to Table 2.0-1 below).*

DOE Response

1. The periodic monitoring report (PMR) will be updated to include detailed descriptions of deviations and causes in a bulleted list. Steps taken to prevent reoccurrence of a deviation are conducted as part of the Interim Facility-Wide Groundwater Monitoring Plan (IFGMP) (N3B 2020, 701041; N3B 2021, 701672) planning before work begins and are presented in the response to comment 5a. Any new deviations are considered as part of future IFGMP development.

NMED Comment

2. Section 6.3 Data Gaps, page 14:

***NMED Comment:** Additional details need to be provided. Provide detailed descriptions of the types of data gaps, causes, and any steps taken to prevent re-occurrence. It is not sufficient to simply reference Table 2.1-1, also see comments related to Table 2.0-1 below.*

DOE Response

2. The PMR will be updated to include detailed descriptions of deviations and causes in a bulleted list. Steps taken to prevent reoccurrence of a deviation are conducted as part of the IFGMP (N3B 2020, 701041; N3B 2021, 701672) planning before work begins and are presented in the response to comment 5a. Any new deviations are considered as part of future IFGMP development.

NMED Comment

3. **Table 2.0-1 General Surveillance Monitoring Group Locations and General Information, page 27:**

NMED Comment: NMED notes an inconsistency between the screen depths reported for R-19 screen 3 in quarter 1 (85-41 ft depth), and the depths reported for the same R-19 screen 3 in quarter 3 (1171.4-1215.4 ft depth). Additionally, NMED notes that the screen depth reported for R-19 screen 3, quarter 1 of Table 2.0-1 is not consistent with the depths reported in subsequent Tables in Appendices A, B, or C of the Report. Please review and make appropriate revisions. In addition, add a footnote for the "sample collection date" column title that references Section 4.4 (Groundwater Elevations).

DOE Response

3. R-19 screen 3, 2021 Quarter 4 and 2022 Quarter 1 screen top and bottom depths were incorrectly listed. R-19 screen 3 depths in Table 2.0-1 of the report will be updated to the correct depths of 1171.4 ft–1215.4 ft.

Discussions with NMED on February 18, 2021, determined that the PMR groundwater contour elevation map should be a synoptic groundwater contour map from the first measurement of the first day of the periodic monitoring event within the PMR, as noted in section 4.4. The discussions also determined that the regional groundwater contours should be drawn by hand using sitewide regional groundwater in accordance with the three-point method, 3PE, as described by the U.S. Environmental Protection Agency (https://cfpub.epa.gov/si/si_public_record_report.cfm?dirEntryId=287064&Lab=NRMRL).

Therefore, regional wells that are not part of the PMR are included in the groundwater contour map generation. Table 2.0-1 lists sample locations and dates on which samples were collected from these locations. Table 2.0-1 in the General Surveillance monitoring group lists a subset of wells that are used for the contour map; alluvial wells and intermediate wells are not included in this data set. As noted in section 4.4, a groundwater contour map is generated on the first day of the PME. Adding a footnote to the few regional wells that are part of the contour map generation within Table 2.0-1, the samples collected table, would be confusing to the reader and would not offer information not already provided in the appropriate groundwater elevations section. The PMR complies with the 2016 Consent Order on Compliance (Consent Order) and no revision to the report is required.

NMED Comment

4. **Table 2.1-1 Description Column, page 30:**

NMED Comment: The Permittee's statement "flow rate not collected" is not sufficient and the cause of this data gap must be fully described in Sections 2.1-1 and Section 6.3, along with a proposed solution to prevent re-occurrence.

DOE Response

4. The statement “flow rate not collected” was used twice in Table 2.1-1 of the PMR. The PMR will be updated to include additional information as noted in the “Updated Comment” column below.

Sampling Event		Watershed	Monitoring Location	Observation/Deviation	Comment	Updated Comment
MY	Q					
2022	1	White Rock	Spring 4A	Flow rate not collected.	None	Unable to measure flow rate because of boulders and poison ivy around the source and downstream
			Spring 9A	Flow rate not collected.	None	Source too diffuse to calculate flow rate

Appendix B, section B-2 of the monitoring year (MY) 2021 and MY 2022 IFGMP (N3B 2020, 701041; N3B 2021, 701672) states “Where both field conditions and flow conditions allow, a discharge measurement should be taken using one of the methods outlined in N3B-SOP-ER-3002. Discharge may be estimated where quantitative measurements are not possible.” Upon arrival at a spring location, the samplers evaluate conditions around the springs and whether the field conditions and flow conditions allow for a flow measurement. When locations are inaccessible because of obstacles such as boulders or hazards such as poison ivy, or when runoff from the source does not follow a channel and a flow rate cannot be calculated, then no flow rate can be collected.

NMED Comment

5. Table 2.1-1 Comment Column, pages 29-32:

- a. **NMED Comment:** *The Permittee's statement "Canceled because site was dry" is not sufficient, the Permittee must provide a rationale of possible causes for the site being dry and must also propose alternative sampling plans or new locations to address this issue in the future.*
- b. **NMED Comment:** *The statement "insufficient water for sampling" does not describe the amount of water collected, and if a partial prioritized analysis was or was not possible with the volume of water available. Revise the statement to provide adequate detail.*
- c. **NMED Comment:** *The statement "water level in sump" is not sufficiently descriptive and must be expanded upon in Section 2.1-1 to provide the amount of water in the sump and the rationale for why this justified canceling sample collection.*
- d. **NMED Comment:** *The statement "Sampled per Attachment 14 of the groundwater SOP" must be revised in Section 2.1-1 or in another section of the Report, as applicable, to include a description of the sampling performed. A reference to LANL's internal standard operating procedure is not sufficient.*

A revised Report must be provided within 30-days from the receipt of this letter. The Permittees must provide two physical copies, as well as an electronic copy

DOE Response

5. a. The PMR presents results of periodic groundwater monitoring conducted pursuant to the IFGMP. As noted in Table 1.8-1 in the MY 2021 and MY 2022 IFGMPs, semiannual sampling events in the Water/Cañon de Valle watershed will be conducted in March and August, when possible, to improve the likelihood that water will be sufficient to collect samples from base-flow, springs, and alluvial well locations (N3B 2020, 701041; N3B 2021, 701672).

All planning, including proposing alternative sampling plans or new locations to address dry wells, is part of the NMED-approved IFGMP (N3B 2020, 701041; NMED 2020, 701050; N3B 2021, 701672; NMED 2021, 701725). Sampling deviations are addressed in the IFGMP under section 1.11:

Occasionally, monitoring locations scheduled for a sampling campaign cannot be sampled for various reasons. In these cases, NMED is notified of deviations from the IFGMP in the PMRs, in accordance with the requirements of Appendix E, Part IV, of the Consent Order.

The following approach will be implemented when samples cannot be collected per the requirements of the IFGMP:

- Locations that are dry or that do not have adequate water for sampling during the scheduled sampling campaign will be sampled during the next scheduled sampling event for those locations. Locations that are consistently dry from year to year will be removed from the IFGMP.
- Locations that have limited water will be sampled according to a prioritized sampling suite prepared for the monitoring group or sampling location (Table 1.11-1 of the IFGMP [N3B 2020, 701041; N3B 2021, 701672]).
- If a location cannot be sampled because of pump or equipment failure, every effort will be made to repair the equipment, and the location will be sampled during the next scheduled sampling event for the location.
- If a location cannot be safely sampled because of changes in field conditions, the situation will be discussed with NMED personnel and alternative sampling arrangements will be considered to ensure sampling can be conducted safely.
- If a location cannot be sampled within the 21-day sampling window because of access issues (e.g., as a result of road damage from flooding or inaccessibility because of snow), Newport New Nuclear BWXT-Los Alamos, LLC (N3B) will work to reestablish access and to sample the location during the sampling campaign. If access cannot be reestablished during the campaign, the location will be sampled during the next scheduled sampling event for the location.

The sampling methodologies comply with the IFGMP and no revision to the report is required.

5. b. All sampling during November 2021 for the General Surveillance monitoring group PMR was conducted per the MY 2022 IFGMP (N3B 2021, 701672). As noted in Appendix B of the IFGMP, which summarizes the standard operating procedure (SOP) followed to collect water samples, N3B-SOP-ER-3003 Revision 1, "Groundwater Sampling," is used for sampling

groundwater. In general, a well may be sampled once the following criteria have been met (see N3B-SOP-ER-3003 for details):

- A minimum of 1 casing volume (CV) has been removed for alluvial wells and a minimum of 3 CVs (plus the drop pipe) have been removed for intermediate or regional wells (unless otherwise requested).

If these parameters cannot be met, then there is insufficient water for sampling. And a representative sample from the aquifer is not able to be obtained.

5. c. If the water level is in the sump, then a representative sample is not able to be collected from the aquifer.
5. d. IFGMP Table B-1.0, Procedures for Measuring Groundwater Levels and Collecting Water Samples, will be updated to include the low-flow approach in the MY 2024 IFGMP.

Additionally, the text will be updated to state: "Sampled using the 'low-flow approach' as directed in Appendix F, Section I.B.5.d of the Consent Order.

REFERENCES

- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 2020. "Interim Facility-Wide Groundwater Monitoring Plan for the 2021 Monitoring Year, October 2020–September 2021, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2020-0404, Los Alamos, New Mexico. (N3B 2020, 701041)
- N3B (Newport News Nuclear BWXT-Los Alamos, LLC), September 2021. "Interim Facility-Wide Groundwater Monitoring Plan for the 2022 Monitoring Year, October 2021–September 2022, Revision 1," Newport News Nuclear BWXT-Los Alamos, LLC, document EM2021-0535, Los Alamos, New Mexico. (N3B 2021, 701672)
- NMED (New Mexico Environment Department), September 29, 2020. "Approval, Interim Facility Wide Groundwater Monitoring Plan for the 2021 Monitoring Year, October 2020 - September 2021," New Mexico Environment Department letter to A. Duran (EM-LA) from K. Pierard (NMED-HWB), Santa Fe, New Mexico. (NMED 2020, 701050)
- NMED (New Mexico Environment Department), October 18, 2021. "Approval, Interim Facility Wide Groundwater Monitoring Plan for the 2022 Monitoring Year, October 2021 - September 2022," New Mexico Environment Department letter to A. Duran (EM-LA) from R. Maestas (NMED-HWB), Santa Fe, New Mexico. (NMED 2021, 701725)