Certified Mail - Return Receipt Requested

October 31, 2022

Tim Davis
Chief Environmental Officer
National Aeronautics and Space Administration
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

Attention of: RE-22-053

RE: APPROVAL WITH MODIFICATIONS
WHITE SANDS TEST FACILITY GROUNDWATER MONITORING PLAN
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHNSON SPACE CENTER WHITE SANDS TEST FACILITY
DOÑA ANA COUNTY, NEW MEXICO
EPA ID #NM08800019434
HWB-NASA-22-006

Dear Mr. Davis:

The New Mexico Environment Department (NMED) has received the National Aeronautics and Space Administration Johnson Space Center White Sands Test Facility (Permittee) *White Sands Test Facility Groundwater Monitoring Plan* (Plan), dated April 29, 2022. NMED has completed review of the Plan and hereby issues this Approval with the following modifications.

MODIFICATIONS

1. **Section 4.4.3, Wells 300-C-128, 400-C-118, 400-C-143, BLM-1-435, and PL-3-453, Pages 19 and 20**

   NMED Comment: The Section 4.4.3 comments below must be addressed as follows:

   a. Based on the decline of water levels at monitoring well 400-C-118 and the resulting inability to collect representative data at the sampling location, the monitoring well may be abandoned in accordance with 2009 *National Aeronautics and Space Administration White Sands Test Facility Hazardous Waste Permit* (Permit) Attachment 19, Monitoring Well Construction Requirements, Section 19.4, Well

Abandonment. Documentation of abandonment activities must be included in a report and submitted to NMED within **90-days** of the well abandonment. No revisions to the Plan are required in response to this comment.

b. The Plan indicates that the Permittee intends to abandon groundwater monitoring well BLM-1-435 because of the decline in groundwater levels at the sampling location and reevaluate the need for a replacement groundwater monitoring well. Based on the location of BLM-1-435 within the mapped contamination Plume-Front area, the monitoring well must be replaced. The new monitoring well must be located in close proximity to the original well and the screened interval must be set at a depth that allows for the sampling of the same groundwater as the original monitoring well for continued characterization of the groundwater contaminant plume. Following further evaluation proposed in the Plan, a monitoring well abandonment and replacement work plan must be submitted to NMED for review and approval no later **April 30, 2023**.

c. The Plan indicated that the Permittee intends to abandon groundwater monitoring well PL-3-453 because of the decline in groundwater levels at the sampling location and reevaluate the need for a replacement well. PL-3-453 is a sentinel well located southwest of the mapped Plume-Front contamination plume area and is up-gradient of Plume-Front Remediation System injection wells and, therefore, must be replaced. The new monitoring well must be located in close proximity to well PL-3-453 and the screened interval must be set at a depth that allows for the sampling of the same groundwater as the original monitoring well for continued groundwater characterization. Following further evaluation proposed in the Plan, a monitoring well abandonment and replacement work plan must be submitted to NMED for review and approval no later **April 30, 2023**.

2. Section 4.4.4, 400-KV-142 and 400-LV-125, Page 20

NMED Comment: Based on the dry well conditions reported for groundwater monitoring components of 400-KV-142 and 400-LV-125, the groundwater wells may be abandoned in accordance with Permit Attachment 19, Section 19.4, Well Abandonment. Documentation of abandonment activities must be included in a report and submitted to NMED within **90-days** of the well abandonment. No revisions to the Plan are required in response to this comment.

3. Section 4.4.5, Well BLM-2-482, Page 20

NMED Comment: Based on inadequate groundwater for sampling reported at BLM-2-482, the groundwater monitoring well may be abandoned in accordance with Permit, Attachment 19, Section 19.4, Well Abandonment. Documentation of abandonment

activities must be included in a report and submitted to NMED within **90-days** of the well abandonment. No revisions to the Plan are required in response to this comment.

4. **Section 4.4.10, Well NASA 8, Page 22**

NMED Comment: Based on inadequate groundwater for sampling reported at NASA 8 since at least 2015, the groundwater sampling well may be abandoned in accordance with Permit Attachment 19, Section 19.4, Well Abandonment. Documentation of abandonment activities must be included in a report and submitted to NMED within **90-days** of the well abandonment. No revisions to the Plan are required in response to this comment.

5. **Section 9.7, Per-and Polyfluoroalkyl Substances (PFAS), Page 42**

NMED Comment: The Section 9.7 comments below must be addressed as follows:

a. Based on ongoing development of sample analysis technology for PFAS in environmental media, the Permittee must ensure that sample analysis methods proposed in subsequent groundwater monitoring and investigation work plans are the most current and comprehensive United States Environmental Protection Agency validated methods for the applicable sample media and respective site and site receptor evaluation. As the Permittee has specified that the scope of work proposed may already be in progress, no changes to the Plan are required in response to this comment.

b. The Permittee stated that "[t]o accommodate schedule constraints placed on WSTF [White Sands Test Facility] by NASA Headquarters, NASA expects to collect groundwater samples for analysis of PFAS in mid-2022 and plans to summarize the results of the assessment in a report to be published later in 2022. NASA will provide a copy of the report to NMED for reference purposes when it becomes available for use at WSTF." In accordance with Permit Part VII, Corrective Action for SWMUs [Solid Waste Management Units] and AOCs [Areas of Concern], NMED may require additional investigation at potential PFAS contamination source and surrounding areas based on the results of NASA's proposed PFAS groundwater sampling scope of work and reporting. Updates on the status of the pending report submittal must be provided in WSTF monthly activity reports, periodic monitoring reports for respective PFAS sampling event periods, and/or other project update correspondence. No changes to the Plan are required in response to this comment.

c. Upon detection of PFAS at groundwater monitoring wells scheduled for PFAS sample analysis in the Plan, subsequent WSTF Groundwater Monitoring Plans must propose additional sampling and analysis for PFAS on a schedule suitable for the collection of

representative data for these emerging contaminants of concern. No changes to the Plan are required in response to this comment.

6. Section 11.4., Schedule for Periodic Reporting, Page 51

NMED Comment: The Section 11.4 issues must be addressed as follows:

a. The groundwater monitoring reporting schedule was established by Permit Sections VI.D through VI.F and prior NMED-Approved WSTF Groundwater Monitoring Plans and cannot be changed without NMED approval. Based on the nature and extent of groundwater contamination at WSTF, all groundwater monitoring reporting must continue on a quarterly schedule as stated in the NMED-Approved April 2021 *Groundwater Monitoring Plan* (2021 Plan). All refence to a six-month reporting period and submittal of semiannual PMRs must be removed from the revised Plan.

b. As previously stated in the NMED-Approved 2021 Plan, Section 11.4 must be revised to state that "[r]outine PMR [Periodic Monitoring Report], which include chemical analytical data that were processed through WSTF data management system during the reporting period (calendar quarter). These PMR also include brief discussions of groundwater monitoring and remediation activities and summarize the results of groundwater and remediation system monitoring. These PMR are submitted to NMED no later than April 30 (for January through March), July 31 (for April through June), and October 31 (for July through September) of each year."

c. As previously stated in the NMED-Approved 2021 Plan, Section 11.4 must be revised to state that "[c]omprehensive PMR, which includes additional data and a more comprehensive evaluation of corrective measures. This PMR includes a complete evaluation of contaminant plume capture and detailed results of remediation system monitoring. This PMR is submitted to NMED no later than January 31 of each year and includes information applicable to the preceding year (January through December)."

d. As previously stated in the NMED-Approved 2021 Plan, Section 11.4 must be revised to state "PMR will provide the results of groundwater monitoring conducted in accordance with this Plan for the calendar quarter that coincides with chemical analytical data processed in the three months prior to the month in which the report is submitted. This three-month period is referred to as the reporting period, and is offset from the calendar quarter by two months. For instance, the PMR submitted in April will include the results of groundwater monitoring (including monitoring well sampling) performed in November, December, and

January and represent data processed and evaluated during the reporting period (January, February, and March)."

The Plan must be revised accordingly, and replacement pages must be provided. Failure to revise the Plan as required by NMED will result in rejection or disapproval of the semiannual PMRs and direction to submit the required quarterly PMRs. NMED's Plan modification requirements are provided in accordance with Permit Section I.L, Approval of Work Plans and Other Documents, and are enforceable under the Permit.

7. **Table 9.1, Preferred Analytical Requirements for VOCs, Nitrosamines, and Metals, Pages 86 and 87**

NMED Comment: The proposed method detection limits established at 20% of the cleanup level and the listed practical quantitation limits must be updated for toluene, acetone, chloroethane, 1,1,1-trichloroethane, 1,1-dichloroethene, thallium, and barium to reflect the updated screening levels proposed in Table 3.1, Hazardous Waste Constituents in WSTF Groundwater, and to conform to the standard proposed in Section 9.0 of the Plan. Ensure all information presented on the table is updated and accurate. Revise the table accordingly and provide a replacement table.

The Permittee must provide replacement pages that address NMED's required modifications. In addition, a response letter that cross-references where the modifications were addressed must be provided. The response letter must also be provided as an electronic copy. Electronic copies of the revised Plan and a redline-strikeout version of the Plan showing where all changes were made must be submitted to NMED no later than **November 30, 2022.**

This approval is based on the information presented in the document as it relates to the objectives of the work identified by NMED at the time of review. Approval of this document does not constitute agreement with all information or every statement presented in the document.

If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 690-5760.

Sincerely,

Rick Shean

Digitally signed by Rick Shean
Date: 2022.10.31 11:04:56 -06'00'

Rick Shean
Chief
Hazardous Waste Bureau

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