Certified Mail - Return Receipt Requested

June 6, 2022

Brian D. Knight
Environmental Division (Building 163)
U.S. Army White Sands Missile Range
White Sands Missile Range, NM 88002-5000

RE: DISAPPROVAL
RCRA FACILITY INVESTIGATION WORK PLAN
SWMUS 55, 56, AND 56A
HAZARD TEST AREA OPEN BURN/OPEN DETONATION PITS
DONA ANA COUNTY
WHITE SANDS MISSILE RANGE, NEW MEXICO
EPA ID #NM 2750211235
HWB-WSMR-21-010

Dear Mr. Knight,

The New Mexico Environment Department (NMED) has received the White Sands Missile Range (the Permittee) *RCRA Facility Investigation Work Plan, SWMUs 55, 56, and 56A, Hazard Test Area Open Burn/Open Detonation Pits* (Work Plan), dated March 2021 and received May 13, 2021. NMED has reviewed the Work Plan and hereby issues this Disapproval with the following comments.

NMED COMMENTS

1. **Section 1.3 Approach and Implementation, page 1-5:**

   Permittee Statement: "Munitions and explosives of concern or material potentially presenting an explosive hazard may be present at the site. All site work will, therefore, be completed using unexploded ordnance (UXO) avoidance methods, with oversite by trained and qualified UXO escort personnel."

   NMED Comment: The Permittee must revise the Work Plan to include additional details regarding UXO avoidance and clearance requirements and methods in the appropriate field activities sections and also provide a more detailed description as an attachment to

the Work Plan. For example, describe the procedure for collecting undisturbed near-surface soil samples with respect to UXO examination and clearance of boreholes. NMED notes that during the soil sampling conducted in 2012, the work plan did not provide clear direction on how to deal with surface and near surface soil sampling when the first five feet of each boring must be UXO cleared. This resulted in a failure by field staff to collect some samples from the correct depths. The Permittee must discuss such conditions and the steps taken to address UXO in the Phase I Investigation Report.

2. **Section 1.3 Approach and Implementation, page 1-4; Section 2.4.4 Surface Geophysical Surveying, pages 2-13 to 2-14; and Figure 16 Conceptual Diagram Showing Principal Components of Magnetometric Resonance Imaging:**

   a. **NMED Comment:** The Permittee's description of the proposed geophysical survey is insufficient. The Permittee must include additional information on the design and implementation of the survey such as the model of instruments that will be used, the extents of the survey area, the depth of investigation, electrode configuration, identification of the wells in which the electrodes will be deployed, quality control checks to be performed during the collection of field data, processing of field data, and identification of buried infrastructure such as electrical utilities or anomalies associated with munitions and explosives of concern (MEC) that may impact data quality.

   b. **NMED Comment:** Section 1.3 refers to magnetometric *resistivity* imaging while the title of Figure 16 refers to magnetometric *resonance* imaging. These are two different imaging technologies. Revise the Report to resolve the discrepancy.

3. **Section 2.1, Background and Section 2.3 Previous Investigations, pages 2-9 to 2-12:**

   NMED Comment: The Permittee did not provide any figures that depict previous soil sample locations or tables that summarize the historical analytical data. The December 2009 WSMR Resource Conservation and Recovery Act (RCRA) Hazardous Waste Storage Facility Permit (Permit) Appendix 7, Section 7.2.5 (Background) states that "[t]his section shall include brief summaries of results of previous investigations, if conducted, including references to pertinent figures, data summary tables, and text in previous reports. At a minimum, detections of contaminants encountered during previous investigations shall be presented in table format, with an accompanying figure showing sample locations. References to previous reports shall include page, table, and figure numbers for referenced information."

In addition, Permit Appendix 7, Section 7.2.12 (Figures), requires a figure depicting historical and proposed soil boring or excavation locations and sampling locations. The Permittee must provide a table that presents the detections of contaminants of concern (COCs) encountered in soil samples from previous investigations with an accompanying figure depicting previous soil sample locations. All figures must be of sufficient detail and accuracy to locate and report all current and future work performed at the site.

4. **Section 2.4.2 Surface and Shallow Surface Sampling, page 2-13:**

Permittee Statement: "Soil borings will be continuously cored to a depth of approximately 10 ft bgs using a hand or power auger with a 3-inch auger head so that soil cores can be obtained for logging and sampling."

NMED Comment: Permit Appendix 5, Section 5.2.2.b.i (Drilling), states:

"Unless otherwise specified by NMED, the borings shall be advanced to the following minimum depths:

1. In all borings, 25 ft below the deepest detected contamination based on field screening, laboratory analyses, and/or previous investigations at the site;
2. Twenty ft below the base of disposal units if contamination is not detected;
3. Five ft below the base of shallow structures such as tanks, piping or building sumps, or other building structures;
4. Depths specified by NMED based on regional or unit specific data needs."

The Permittee must revise the Work Plan to meet the requirements of the Permit or provide justification for limiting the soil borings to a depth of 10 ft bgs.

5. **Section 2.4.3 Surface Water Sampling, page 2-13:**

Permittee Statement: "Automated surface water monitoring and sampling stations will be installed within the arroyos at key locations, including immediately above and below the OB/OD pits, as well as down slope at roughly 2,000 ft intervals (see Figure 4)."

NMED Comment: The Permittee must provide additional rational for the proposed locations of the automated surface water monitoring and sampling stations. A figure depicting surface water sampling locations must include ground surface elevation contours at a minimum of 3 ft intervals. The Permittee must also include information on the model of autosampler that will be employed and its suitability in an environment where very high energy surface water flow may occur during heavy precipitation events.

6. **Section 3 Field Activities, pages 3-1 to 3-5:**

   a. **NMED Comment:** Some of the field activities described in the Work Plan include activities that will be conducted as part of the Phase II investigation such as installation of suction lysimeters and installation of additional groundwater monitoring wells. Field activities described in the Work Plan should be limited to those activities that will be conducted during the Phase I investigation. Revise the Work Plan to remove the Phase II investigation activities and provide a separate Phase II investigation work plan for the Phase II field activities.

   b. **NMED Comment:** Section 3 does not describe field activities related to surface and shallow soil sampling. The Permittee must revise the Work Plan to describe the field activities related to surface and shallow soil sampling including descriptions of soil sampling decontamination procedures and borehole abandonment. Decontamination must be performed according to Permit Appendix 5, Sections 5.2.2.b.i and 5.2.3.

7. **Section 4.2 Data Quality Objectives – Groundwater, pages 4-2 to 4-3 and Figure 3 Existing and Proposed Groundwater Monitoring Wells:**

   Permittee Statement: "Optimize the Design – This Work Plan will be used as guidance during field activities to optimize data quality. Proposed groundwater monitoring well locations have been chosen based upon the most recently available groundwater monitoring data (July 2020)."

   NMED Comment: The Permittee has proposed groundwater monitoring well locations based on the July 2020 monitoring data; however, it is NMED's opinion that the results of the Phase I investigation will provide more accurate locations for the monitoring wells. The July 2020 data can be used to support the conclusions from the Phase I investigation to propose new groundwater monitoring well locations. The Permittee must revise Section 4.2 and Figure 3 to include a note that the final location of additional groundwater monitoring wells will be determined after the Phase I investigation has been completed.

8. **Section 4.3 Quality Assurance/Quality Control-Soil, pages 4-3 to 4-4:**

   NMED Comment: The Permittee proposes to collect soil field duplicate samples at a ten percent rate, matrix spike samples at a five percent rate, and equipment rinsate blanks at a five percent rate or one per day. These Quality Assurance/Quality Control samples do not meet Permit requirements. Permit Appendix Section 5.2.2.e, Soil, Rock, and Sediment Sample Types, states:

> "The Permittee shall collect QA/QC samples to monitor the validity of the soil, rock, and sediment sample collection procedures. Field duplicates will be collected at a rate of ten percent. The Permittee shall collect equipment blanks from all sampling apparatus at a frequency of ten percent for chemical analysis. Equipment blanks shall be collected at a frequency of one per day if disposable sampling equipment is used. The Permittee shall collect field blanks at a frequency of one per day for each medium (with the exception of air samples) at each SWMU, AOC, or other site. Reagent blanks shall be used if chemical analytical procedures requiring reagents are employed in the field as part of the investigation or monitoring program."

The Permittee must revise the Work Plan to meet the minimum requirements of the Permit for QA/QC samples.

9. **Section 5.1 Project Scheduling and Reporting Requirements, page 5-1:**

Permittee Statement: "An RFI Report will be prepared to document magnetometric resistivity imaging result, shallow soil sampling activities, and groundwater monitoring."

NMED Comment: NMED concurs with the Permittee that a phased investigation approach is appropriate for the site with each phase building on the findings and conclusions of the previous phase. After the first phase of work is complete the Permittee must submit a Phase I RCRA facility investigation report (RFI) by the due date established by NMED upon approval of the Work Plan. Following approval of the RFI by NMED the Permittee must submit a Phase II work plan based on the conclusions and recommendations presented in the Phase I RFI. (See also Comment 6)

The Permittee must address all comments in this Disapproval and submit a revised Work Plan in the form of two bound hard copies and two electronic copies. A red-line strikeout version of the Work Plan in electronic format must be included showing where all revisions to the Work Plan have been made. The revised Work Plan must be accompanied with a response letter that details where revisions have been made, cross-referencing NMED's numbered comments. The revised Work Plan must be submitted to NMED no later than **October 31, 2022**.

Should you have any questions, please contact Robert Murphy of my staff at (505) 690-5660.

Sincerely,

Rick Shean Digitally signed by Rick Shean
Date: 2022.06.06 12:46:57 -06'00'

Rick Shean
Bureau Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
R. Murphy, NMED HWB
L. Tsinnajinnie, NMED HWB
B. Avalos, WSMR
J. Smith, WSMR
L. King EPA Region 6 (6LCRRC)

File: WSMR 2022 and Reading