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**Certified Mail - Return Receipt Requested**

May 18, 2022

Colonel Terence G. Taylor  
Commander, 27th Special Operations Wing  
100 Air Commando Way, Suite 100  
Cannon Air Force Base  
New Mexico 88103-5214

**RE: DISAPPROVAL  
WORK PLAN RCRA FACILITY INVESTIGATION SITE AT134  
CANNON AIR FORCE BASE, NEW MEXICO  
EPA ID #NM7572124454  
HWB-CAFB-20-005**

Dear Colonel Taylor:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *Work Plan RCRA Facility Investigation Site AT134 (Work Plan)*, dated November 11, 2020. NMED has reviewed the Work Plan and hereby issues this Disapproval. The following comments must be addressed.

**COMMENTS**

**1. Section 3.3, Potential Pathways, Page 6**

**NMED Comment:** The Permittee's proposed vapor intrusion pathway evaluation discussion is not consistent with NMED's November 2021 *Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance)*. To clarify, RA Guidance Section 2.5.2.1, Incomplete Pathway, specifies that the vapor intrusion pathway is only considered incomplete if 100% of the soil data are "non-detect" for volatile organic compounds (VOCs). Per RA Guidance Section 2.5.2.2, Potentially Complete Pathway, the vapor intrusion pathway is potentially complete when detections of VOCs are minimal, concentrations are below screening levels, no suspected source(s) are identified, and contaminant concentrations decrease with depth. This requires qualitative evaluation and discussion in an investigation report. A quantitative assessment of the vapor intrusion pathway, that must include soil vapor sampling and risk screen evaluation, is required by RA Guidance Section 2.5.2.3, Complete Pathway, if volatile and toxic compounds are detected

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consistently in site media during investigation or confirmation sampling, concentrations are detected at depth or show increasing concentrations with depth in soil, and/or there is potentially a source(s) for volatile and toxic compounds based on site history. The vapor intrusion pathway must be evaluated in accordance with the RA Guidance. Revise the Work Plan accordingly.

**2. Section 3.4, Potential Receptors, Pages 6 and 7**

**Permittee Statement:** “[A] conservative soil exposure interval of zero to ten feet bgs [below ground surface] is considered appropriate for both human and ecological receptors.”

**NMED Comment:** The proposed approach may or may not result in a conservative evaluation, depending on the extent of contamination encountered at the site. For example, if contamination is mostly surficial, evaluating deeper, less impacted soil, can dilute the exposure point concentration and result in a less conservative risk evaluation. The Work Plan must be revised to propose risk evaluation for the appropriate exposure intervals for human (i.e., residential, industrial, and construction worker) and burrowing and non-burrowing ecological receptors in accordance with RA Guidance Section 2.8.2, Determine Exposure Intervals. The Work Plan must be revised accordingly.

**3. Section 5.4.1, Field Screening, Page 13**

**Permittee Statement:** “[A]dditional soil borings will be advanced 20 feet away in up to four directions from the original soil boring location.”

**NMED Comment:** Any necessary step-out borings for delineation of encountered contamination must not exceed a distance 10 feet from the original boring location. The Work Plan must be revised accordingly.

**4. Section 5.5, Vapor intrusion Monitoring, Pages 13 and 14**

**NMED Comment:** The following comments must be addressed as follows:

- a. If investigation results indicate quantitative evaluation of the soil vapor pathway is required (see NMED Comment 1 above), a work plan addendum to include a brief discussion of preliminary findings of the investigation and proposed soil vapor sampling locations and depths must be submitted for NMED approval. Include this provision in the revised Work Plan.
- b. To ensure sample integrity, soil vapor samples must be collected in SUMMA canisters and the samples analyzed by US Environmental Protection Agency (EPA)

Method TO-15 or a comparable method to be specified in the revised Work Plan. The Work Plan must be revised accordingly.

**5. Section 5.6, Monitoring Well Installation, Pages 14 and 15**

**NMED Comment:** The following comments must be addressed as follows:

- a. The Permittee stated, “[i]f soil sample concentrations exceed screening levels at depths below the caliche caprock layer, the project team may decide to install monitoring wells to investigate soil contamination reaching the groundwater. This is not expected if soil contamination does not extend past the caliche layer, which provides an impermeable layer between the surface soils and the often water bearing Ogallala formation.” Information gathered during subsurface investigations at RCRA solid waste management units, areas of concern, and other sites including monitoring well installations at Cannon Air Force Base (CAFB) indicate that an impermeable caliche caprock layer does not exist at CAFB. Additionally, the Ogallala aquifer is currently water bearing at CAFB and the surrounding area. Appropriate lines of evidence for a soil-to-groundwater pathway evaluation are outlined in RA Guidance Section 4.9, Summary of the Migration to Groundwater Pathway SL-SSLs. The Work Plan must be revised to remove the Permittee’s generalized statement and any other unsubstantiated soil-to-groundwater pathway assumptions (e.g., Figure 4-1, Decision Logic).
- b. The Permittee has proposed vertical delineation of contamination to groundwater that is typically encountered at depths greater than 300 ft bgs at CAFB, if necessary. However, it is unclear how this will be accomplished with direct push technology (DPT) alone. The Work Plan must be revised to clarify the contingency drilling method to be used at depths and conditions beyond the capabilities of DPT for any necessary contamination delineation.
- c. If monitoring well installation is required for contamination delineation, the Permittee must submit a Work Plan addendum detailing the preliminary findings of the investigation and additional details of the proposed monitoring well installation(s) for NMED approval, rather than the proposed technical memorandum. The Work Plan must be revised accordingly.

**6. Section 5.7.1, Quality Assurance/Quality Control Samples, Pages 15 and 16**

**NMED Comment:** In addition to proposing the collection of quality assurance and quality control (QA/QC) samples, the revised Work Plan must also propose and discuss in detail the QA/QC procedures to be used to validate project chemical analytical data and report the results as required by Permit Section 4.5.9, Laboratory Reporting, Documentation, Data

Reduction, and Corrective Action. Reference to Permit Section 4.5, Analysis, alone is not appropriate for proposing sample data validation procedures. The Work Plan must be revised accordingly.

**7. Section 5.10, Sample Analysis, Pages 17 and 18**

**NMED Comment:** The Permittee states in Section 4, Scope of Activities, “[t]here is a suspected release of petroleum tar at the site, but exact contamination is unknown. Therefore, field work for the RFI [RCRA Facility Investigation] will be conducted to determine the nature and extent of contamination of the analytes selected in accordance with the *NMED Risk Assessment Guidance for Site Investigation and Remediation* guidance for unknown oil or waste releases.” Based on the anticipated contaminants of concern identified in the Work Plan (unknown oil and/or waste oil) all soil samples must also be analyzed for total petroleum hydrocarbons diesel range and oil range organics and the results evaluated in relation to RA Guidance Section 6.0, Total Petroleum Hydrocarbons. The Work Plan must be revised accordingly.

**8. Figure 2-4, Site AT134 Sample Location, Page ATT1-4**

**NMED Comment:** The southwestern boundary of site AT134 depicted on the figure appears to overlap the northeastern boundary of Solid Waste Management Unit 129, Waste Oil Storage Facility 244 and must at least be noted in the revised Work Plan. Resolve the discrepancy in the revised Work Plan.

**9. Figure 3-1, Conceptual Site Model, Page ATT1-5**

**NMED Comment:** Figure 3-1 indicates that the beef ingestion pathway is incomplete. Additional lines of evidence to support the exposure pathway evaluation conclusion (e.g., acreage, land use controls, etc.) must be provided and discussed in Section 3.3. Revise the Work Plan accordingly.

**10. Table 5-3, Project Action Limits and Laboratory-Specific Detection/Quantitation Limits-Semivolatile Organic Compounds, Pages ATT2-7 through ATT2-10**

**NMED Comment:** The table cites “site-specific calculated values” for various listed polycyclic aromatic hydrocarbons (PAHs) but does not list actual screening level values for the contaminants of concern (COCs). RA Guidance Table A-1, NMED Soil Screening Levels, lists the established residential soil screening levels (SSLs) for the PAHs listed on Table 5-3 that must be used to propose the appropriate chemical analysis method for the COCs and for use during risk evaluation as required by Permit Section 3.3.2.1, Soil Cleanup Levels. Table 5-3 must be revised to list residential SSLs for PAHs in accordance with Permit requirements. In addition, the Permittee must propose PAH soil sample analyses utilizing the most recent version of EPA Method 8270 with selected ion monitoring (SIM) and ensure

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that the analytical reporting limits do not exceed the applicable regulatory screening levels for PAHs. The Work Plan must be revised accordingly.

The Permittee must submit a revised Work Plan that addresses all comments contained in this Disapproval. In addition, the Permittee must include a response letter that cross-references where NMED's numbered comments were addressed. The Permittee must also submit an electronic redline-strikeout version of the revised Work Plan showing where all changes were made. The revised Work Plan must be submitted to NMED no later than **July 29, 2022**.

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

Sincerely,

**Rick Shean**

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Rick Shean

Chief

Hazardous Waste Bureau

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