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**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 31, 2018

Colonel Stewart A. Hammons  
Commander, 27<sup>th</sup> Special Operations Wing  
110 E. Alison Avenue, Suite 1098  
Cannon Air Force Base  
New Mexico 88103

**RE: DISAPPROVAL  
RCRA FACILITY INVESTIGATION AT SW006 AND WL102  
CANNON AIR FORCE BASE, NEW MEXICO  
EPA ID #NM7572124454  
HWB-CAFB-17-004**

Dear Colonel Hammons:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *RCRA Facility Investigation at SW006 and WL102* (Report), dated February 22, 2017 and received March 3, 2017. NMED has completed review of the Report and hereby issues this Disapproval. The Permittee must address the following comments.

**COMMENTS**

**1. Section 3.5.1, Preliminary Site Conceptual Exposure Models (Vapor Intrusion Exposure Pathway), Pg. 3-3**

**Permittee Statement:** “The primary routes of exposure for future receptors evaluated in the risk screen were ingestion of contaminated soil, dermal contact with contaminated soil, and inhalation of airborne soil particulates. Volatile compounds were not considered the primary contaminants at SW006 or WL102; therefore, volatile emissions and vapor intrusion were considered incomplete exposure pathways.”

**NMED Comment:** NMED's 2017 Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance) Section 2.5.2.1., Incomplete Pathway; No Action Required specifies the vapor intrusion pathway may only be considered incomplete if 100% of the sample analysis data for volatile compounds is non-detect in collected sample media. Based on the results of soil sample analysis completed during investigation, volatile organic compounds (VOCs) have been detected at SW006 (Solid Waste Management Unit (SWMU) 6) and WL102 (SWMU 102). Benzene was detected in a sample collected at SWMU 6 and toluene, xylene, and 4,4-DDE were detected once in samples collected at SWMU 102. Because VOCs were detected in the soil samples collected at each site, the vapor intrusion exposure pathway is potentially complete. A qualitative discussion of the vapor intrusion pathway is required for SWMU 6 and SWMU 102 in the revised Report. The evaluation of the vapor intrusion pathway must be performed in accordance with NMED RA Guidance Section 2.5.2, Evaluation of the Vapor Intrusion Pathway.

**2. Section 3.5.1, Preliminary Site Conceptual Exposure Models (Soil-to-Groundwater Migration Pathway), Pg. 3-4**

**NMED Comment:** The Permittee has stated that the soil-to-groundwater pathway is considered incomplete due to the arid regional climate, depth to groundwater, characteristic Ogallala formation cemented soils, caliche layers, and the presence of clay minerals in formation soils. However, the provided lines of evidence are generalizations which do not sufficiently support the conclusion that the soil-to-groundwater pathway is incomplete at SWMU 6 and SWMU 102. The revised Report must include a screening of maximum COC concentrations to soil-to-groundwater protective soil screening levels (SSLs) as provided in Table A-1: NMED Soil Screening Levels of NMED's RA Guidance. The evaluation of the soil-to-groundwater pathway must consider historical and current sampling data at each site. If COC concentrations are identified in exceedance of soil-to-groundwater protective SSLs, additional lines of supporting information to support an incomplete soil-to groundwater pathway at each SWMU must be provided. The supporting information may include evidence of decreasing COC concentrations with depth, the presence of COC physical chemical properties which limit migration, information regarding removal of any contamination source, and the lack of a transport mechanism for contamination.

**3. Section 3.5.4, Comparison of Site Metals Concentrations to Background Levels, Pg. 3-5**

**Permittee Statement:** "Step 2: Compare the range of detected site concentrations to the range of detected background concentrations. If the site range was within the range of detected background concentrations, then the site concentrations were considered to be background and no additional action was required. If site range exceeded the background range, the metal was considered to exceed background."

**NMED Comment:** NMED's RA Guidance Section 2.8.3.2, Comparison to Background-Discrete Samples, for inorganics does not allow for comparison of site concentration data to a background range. The RA Guidance specifies that if an inorganic COPC maximum site concentration is greater than the background reference value (an established upper tolerance

limit), a two-sample hypothesis test must be utilized to compare the sample analysis result concentration data to the available background data. Under certain limited circumstances, NMED may allow a comparison of concentration data to a background data range when a sufficient number of samples are not available for the required background statistical analysis (i.e., less than 8 samples and/or less than 5 detections). However, the background range comparison must be coupled with multiple lines of supporting evidence such as site history information, and COC delineation information which defines the spatial variation and trend of concentrations for each site. Additionally, if site history information indicates COC concentrations are a result of site activities, then it would be possible that the concentrations may be present due to historical site activities in the upper range of background. In this case, the constituent must still be carried forward as a COPC in the risk evaluation.

The revised Report must include a complete evaluation of inorganic COPCs in accordance with the requirements of Section 2.8.3.2 of NMED's RA Guidance for SWMU 6 and SWMU 102.

#### 4. Section 4.2, Field Activities, Pg. 4-1

**Permittee Statement:** "All field activities were completed in accordance with the approved RFI work plan and approval with modification letters from NMED."

**NMED Comment:** Based on the information provided in Report Table 4-1, Summary of Sampling Locations and Analytical Parameters Removed Tank No. 129 (SW006) and Table 4-2, Summary of Sampling Locations and Analytical Parameters Wastewater Treatment Effluent Discharge (WL102), resampling at previously completed boring locations was performed by the Permittee which was not approved by NMED for the July 2015 *RCRA Facility Investigation at Twelve Sites Work Plan, Revision 1* or the January 2016 *Supplemental Sampling Plan Work Plan, RCRA Facility Investigation at Twelve Sites-Revision 1*. Based on the technical rationale provided in Report Tables 4-1 and 4-2, the additional sampling was completed to confirm or refute previously collected historical concentration information at SWMU 6 and SWMU 102 for arsenic and thallium. NMED only approved additional sampling at each SWMU for the collection of additional representative sampling information for use in a refined risk screen evaluation of identified COPCs at each site. It must be noted that any future sampling completed outside of the scope of an NMED approved work plan is performed at the Permittee's own risk and may result in a disapproval of the submitted document, sample invalidation, and/or a requirement for additional work.

#### 5. Section 5.4.1, Human Health Screening-Level Evaluation, SW006, Pg. 5-2

**Permittee Statement:** "The data sets used in the risk screening were comprised of historical and current analytical results from samples collected from 0 to 10 feet [below ground surface] bgs."

**NMED Comment:** NMED's review of the soil concentration data provided in the Report indicates that the historical sample analysis data for benzene and total petroleum hydrocarbons were not considered during risk screen evaluation. Additionally, historical maximum detected concentration data for various metals constituents within the 0 to 10-foot bgs exposure interval (i.e., 8 to 10-foot bgs sample interval) listed in Table 2-3, Comparison of Maximum Subsurface Soil Concentrations to NMED SSLs Removed Tank No.129 (SW006), were also not considered during evaluation of risk for the site. The revised Report must include a complete evaluation of all historical and current concentration data for the 0 to 10-foot bgs exposure interval in accordance with RA Guidance Section 2.8.3, Identification of COPCs. All COCs retained as COPCs must be included in the risk screen evaluation. Section 5.4.1 of the revised Report, must clarify what data were utilized in the risk evaluation for SWMU 6 and provide adequate justification for the exclusion of any data not considered during risk evaluation.

**6. Table E-1, Summary of Soil Analytical Soil Results for SW006 0 TO 10 Foot Soil Exposure Interval**

**NMED Comment:** The Table E-1 footnote indicates that chromium was evaluated as trivalent chromium. However, the sample analysis results presented in the Report appear to represent total chromium concentrations. NMED's total chromium SSLs must be utilized for evaluation of chromium in the revised Report. Use of trivalent chromium SSL's must be accompanied by speciation analysis, which would support the assumption that 100% of chromium concentrations detected in soil samples are in fact representative of trivalent chromium. Revise all affected Report sections, tables, and conclusions accordingly.

**7. Appendix E.2, WL102**

**NMED Comment:** Appendix E.2 contains supporting risk assessment data and calculation tables for SWMU 6. Based on the Permittee's intended Report organization, Appendix E.2 should have contained risk screen evaluation tables for SWMU 102. In the revised Report, include all omitted risk screen data tables. NMED cannot complete review of the assessment and risk evaluation for SWMU 102 due to the absence of the supporting evaluation information.

The Permittee must submit a revised Report 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 have been made to the Work Plan. The revised Work Plan must be submitted on or before **July 31, 2018**.

Colonel Hammons

January 31, 2018

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If you have any questions regarding this letter, please contact Gabriel Acevedo at (505) 476-6043.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Kieling". The signature is fluid and cursive, with a large loop at the end.

John E. Kieling

Chief

Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
B. Wear, NMED HWB  
G. Acevedo, NMED HWB  
L. King, EPA Region 6 (6MM-RC)  
A. Lafuente, CAFB  
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File: CAFB 2018 and Reading, CAFB-17-004