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**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

March 19, 2019

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: SECOND DISAPPROVAL  
RCRA FACILITY INVESTIGATION AT SS507 REVISION 1  
CANNON AIR FORCE BASE, NEW MEXICO  
EPA ID #NM7572124454  
HWB-CAFB-17-001**

Dear Col. Hammons:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *RCRA Facility Investigation [RFI] at SS507[Petroleum, Oil and Lubricants (POL) Yard Refueling Area Site]-Revision 1* (Report), dated April 16, 2018. NMED has reviewed the Report and hereby issues this Disapproval. The following comments must be addressed.

**COMMENTS**

**1. Section 5.4.5, Refined Quantitative Risk Screen Evaluation for Soil, Page 5-5**

**NMED Comment:** The 95% Upper Confidence Level (UCL) for the 0 to 1-foot bgs dataset for chrysene is listed as 6.68E-01 milligrams per kilogram (mg/kg) in the section information. However, the ProUCL output files provided in Appendix E, Human Health Risk Assessments, indicates the correct UCL value is 6.88E-01 mg/kg. Revise the Report accordingly.

## 2. Section 5.4.6, Qualitative Evaluation of Soil Vapor Intrusion, Pages 5-6 and 5-7

**NMED Comment:** The discussion does not address all the issues raised in NMED's January 18, 2018 *Disapproval RCRA Facility Investigation at SS507* (Disapproval) regarding the evaluation of the vapor intrusion exposure pathway, nor are lines of evidence provided that effectively address all the evaluation criteria for vapor intrusion outlined in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* (RA Guidance), Volume I, Soil Screening Guidance for Human Health Risk Assessments, Section 2.5.2.2, Potentially Complete Pathway; Qualitative Discussion. NMED's Disapproval Comment No. 2 noted that anthracene, benzo(a)anthracene, fluorene, naphthalene, 2-methylnaphthalene, and phenanthrene are considered volatile and were detected at SS507. Vapor Intrusion Screening Levels (VISLs) are provided for each polycyclic aromatic hydrocarbon (PAH) in the RA Guidance and the chemicals of concern are identified as volatile organic compounds and toxic due to their respective physical and chemical properties. The vapor intrusion pathway evaluation only addresses m,p-xylene, o-xylene, and naphthalene. The exposure pathway evaluation also does not address the screening of detected volatile compounds against soil gas or groundwater VISLs, nor does it provide any justification for not collecting soil gas and/or groundwater data for further site evaluation. The evaluation does indicate that most above-ground structures have been removed from the site; however, the text does not identify any controls that will prevent construction of buildings in the future at SS507. In order to adequately address the vapor intrusion pathway, the additional information must be provided as follows:

- a. An evaluation of soil gas or groundwater concentration data that demonstrates reported concentrations are below applicable NMED VISLs or lines of evidence supporting the conclusion that screening against VISLs is not necessary due to site characteristics must be provided.
- b. Address all PAHs detected at the site including anthracene, benzo(a)anthracene, and phenanthrene as required by Comment 2 of the Disapproval.
- c. Identify any controls in place that ensure buildings will not be constructed at SS507 in the future.

Revise the Report accordingly.

## 3. Appendix E, Human Health Risk Assessments

**NMED Comment:** The following issues were identified during the review of the human health risk data provided in Appendix E:

- a. The sample concentration data for CA507-SS03-001 was deleted from Table E-2, Summary of Analytical Data Screening Results-0 to 1-Foot Exposure Interval Former POL Refueling Area Site (SS507). Review of the previously included Table E-2 data set for the sample location indicates that the maximum concentration for m,p-xylene (5.70E-

03 milligrams per kilogram (mg/kg)) and the previously reported o-xylene maximum concentration (2.20E-03 mg/kg) were detected at sample location CA507-SS03-001. Include the deleted concentration data in Table E-2 of the revised Report or provide the rationale for deleting the data from the table. Revise the Report accordingly.

- b. Table E-4, Comparison of Maximum Detected Concentrations at SS507 to Screening Criteria – 0 to 1-Foot Exposure Interval, lists an “N” in the column titled Exceeds Screening Value (Y/N) for indeno(1,2,3-c,d)pyrene. The maximum soil concentration for indeno(1,2,3-c,d)pyrene (1.6 mg/kg) exceeds the residential soil screening level (SSL) 1.53 mg/kg. Revise Table E-4 to indicate that indeno(1,2,3-cd)pyrene exceeds its residential SSL. No other changes to the Report are necessary as indeno(1,2,3-cd)pyrene was appropriately retained and evaluated in the risk evaluation.
- c. A calculation error was noted for the total estimated cancer risk in Table E-6, Human Health Quantitative Screening Evaluation Results for SS507 Construction Worker Scenario. The total risk calculation did not include the estimated risk for PCB [polychlorinated biphenyl] Aroclor 1260 (5.28E-07). Revise Table E-9 to include the risk estimate for PCB Aroclor-1260 in the estimated cancer risk calculation. Revise the Report accordingly.
- d. A calculation error was noted for the total estimated cancer risk in Table E-9, Human Health Quantitative Screening Evaluation Results for SS507 Residential Scenario – 95% UCL. The total risk calculation did not include estimated cancer risk for the PCB Aroclor 1260 (4.40E-07). Revise Table E-9 to include the risk estimate for PCB Aroclor 1260 in the estimated cancer risk calculation. Revise the Report accordingly.
- e. A calculation error was noted for the total estimated cancer risk in Table E-10, Human Health Quantitative Screening Evaluation Results for SS507 Construction Worker Scenario – 95% UCL. The total risk calculation did not include estimated risk for PCB Aroclor 1260 (1.25E-08). Revise Table E-10 to include the risk estimate for PCB Aroclor 1260 in the estimated cancer risk calculation. Revise the Report accordingly.
- f. Based on errors identified in Tables E-6 and E-10, the excess cancer risks for construction workers presented in Section 5.6, Site Conceptual Model, must also be revised. Revise the Report accordingly.

#### 4. Appendix F, Ecological Risk Assessment

**NMED Comment:** The following issues were identified during review of the data included in Appendix F, Ecological Risk Assessment, and must be addressed as follows:

- a. The Plant Ecological Screening Levels (ESLs) listed for the high molecular weight polycyclic aromatic hydrocarbons (PAHs) benzo(a)anthracene, benzo(b)fluoranthene, and chrysene listed in Table F-2, Comparison of Maximum Detected Concentrations with Ecological Screening Values and Inorganic Upper Tolerance Limits, do not match the

values listed in Table F-1, Comparison of NMED's Ecological Screening Levels with Project Action Limits and Background Upper Tolerance Limits. Review the Plant ESL values listed in Table F-1 and Table F-2 for high molecular weight PAHs and ensure the correct screening level values as listed in RA Guidance, Volume II, Soil Screening Guidance for Ecological Risk, Table C-6: TRVs [Toxicity Reference Value] and ESLs and Tier 2 TRVs for Plants, are listed in the revised table. As necessary, indicate where surrogate screening levels were used for each chemical of concern in the table notes.

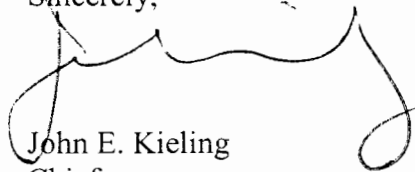
- b. Table F-2 lists the maximum concentration for phenanthrene as 0.51 milligrams per kilogram (mg/kg). However, Table 5.1, Summary of 2016 Analytical Data Former POL Yard Refueling Area Site, and the provided Excel file *1. SS507 Analytical Data* lists the maximum concentration for phenanthrene as 0.31 mg/kg. Resolve the phenanthrene maximum concentration discrepancy and revise the screening level hazard quotient (SLHQ) and hazard quotient (HQ) for the Deer Mouse accordingly.
- c. RA Guidance, Volume II, Table C-2, Tier 1 TRVs and ESLs and Tier 2 TRVs for the Horned Lark list the ESL for PCB Aroclor 1260 as 10.2 mg/kg. Table F-2 lists 102 mg/kg as the ESL for PCB Aroclor 1260 and uses this incorrect screening level to calculate the Horned Lark SLHQ for PCB Aroclor 1260. Revise Table F-2 to reflect the correct ESL and revise the PCB Aroclor 1260 SLHQ and HQ for the Horned Lark. Revise the Report accordingly.
- d. The Plant ESL for PCB Aroclor 1260 listed in Table F-2 is for PCB Aroclor 1254. No Plant ESL is listed for PCB Aroclor 1260 in the RA Guidance. Ensure that revised Table F-2 reflects that no PCB Aroclor 1260 ESL is available for plants and update Table F-2 and any affected sections of the Report accordingly.
- e. Table F-9, Summary of Tier 2 Hazard Quotients for the Plant Community, Horned Lark, and Deer Mouse, lists a lowest-observed adverse effect level (LOAEL) TRV of 3.7 milligrams per kilogram-day [mg/(kg·day)] for lead. However, RA Guidance Table C-1, Tier 1 TRVs and ESLs and Tier 2 TRVs For the Deer Mouse, specifies a LOAEL TRV of 8.9 mg/(kg·day) for lead. In addition, the TRV for chrysene has been listed as 1.7 mg/(kg·day). The TRV for chrysene listed on RA Guidance, Volume II, Table C-1 is 17 mg/(kg·day). Revise Table F-9 to list the correct Deer Mouse LOAEL TRVs for lead and chrysene and update the SLHQs, HQ, and any affected sections of the Report accordingly.

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 Report showing where all changes have been made to the Report. The revised Report must be submitted on or before **July 31, 2019**.

Col. Hammons  
March 19, 2019  
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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 initial "J" and "K".

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED  
B. Wear, NMED HWB  
G. Acevedo, NMED HWB  
L. King, EPA Region 6 (6MM-RC)  
R. Lancaster, CAFB  
S. Kottkamp, CAFB  
C. Gierke, CAFB  
M. Fuchs, CAFB  
D. Canales, CAFB

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