NEW MEXICO
ENVIRONMENT DEPARTMENT

ENTERED

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 25, 2019

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

RE: DISAPPROVAL
RCRA FACILITY ASSESSMENT AT OW541 AND OW560
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID #NM7572124454
HWB-CAFB-17-007

Dear Colonel Hammons:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *RCRA Facility Investigation [RFI] at OW541 and OW560-Revison 1* (Report), dated July 3, 2018. NMED has completed review of the Report and hereby issues this Disapproval. The following comments must be addressed.

GENERAL COMMENTS

1. Report Cover Page

NMED Comment: The Report cover page is dated June 2017. Report-Revision 1 was submitted to NMED in July 2018. Ensure the revised Report includes cover pages with the correct date.

2. Risk Evaluations for OW541 and OW560

NMED Comment: The following was noted by NMED during review of the risk evaluation performed for each site:

a. All detected inorganics were conservatively retained as constituents of potential concern (COPCs) for OW541 and OW560. The use of this conservative approach resulted in an overestimation of risk. However, comparison of inorganics to established surface and subsurface 95% upper tolerance limits (UTLs) established in the 1997 *Naturally Occurring Concentrations of Inorganics and Background Concentrations of Pesticides at Cannon Air Force Base* (Background Study) would have resulted in many of the inorganics detected in soil being eliminated as COPCs during risk evaluation for each site. Comparison of site data to background data for thallium would not have resulted in dropping thallium as a COPC due to background data being "non-detect" and UTLs for thallium being set at one-half the maximum reporting limit. Due to the maximum concentrations for thallium exceeding the UTLs, and the lack of sufficient background data to conduct statistical comparisons, thallium would still be retained as a COPC for risk evaluation. Since evaluation of COPCs during the inorganic background site attribution analysis would likely not have any impact on the conclusion of the risk assessment for each site, reevaluation of the background analysis is not required. However, during future risk evaluation and reporting, consideration must be given to refining the list of COPCs through a comparison to Cannon Air Force Base (CAFB) inorganic background data for surface and subsurface soils. It must also be noted that soil background concentrations for thallium and arsenic were updated in 2016 by CAFB. No revisions to the Report are required with respect to this comment.

b. Sufficient lines of evidence have been provided to show that the soil-to-groundwater pathway is not a significant exposure pathway even though the exposure point concentrations (EPCs) for lead at OW541 and OW560 exceeded the 2017 NMED soil-to-groundwater screening level. Additionally, the updated February 2019 NMED Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance) includes an updated soil-to-groundwater screening level for lead for a dilution attenuation factor (DAF) of 20 (270 milligrams per kilogram (mg/kg)). The EPCs for each site do not exceed the updated lead soil-to-groundwater screening level. No further evaluation of lead for the soil-to-groundwater pathway at OW541 and OW560 or revisions to the Report are required with respect to this comment.

c. NMED review of the human health risk assessment completed for OW541 and OW560 indicates that a soil exposure interval of 0 to10 ft bgs was applied for evaluation of the industrial worker exposure scenario for both sites. The RA Guidance defines the soil exposure interval for the industrial worker as 0 to 1 foot below ground surface (ft bgs). It is understood that surface soil samples were only collected for site OW541; however, it must be noted that use of a larger exposure interval during risk evaluation may result in an underestimation of risk if contamination is present in shallow soils, or an overestimation of risk if contamination below 1 ft bgs drives risk. NMED's review of the

completed risk assessment for each site indicates that the use of the maximum detected concentration over a larger exposure interval resulted in a conservative estimation of risk for the industrial worker receptor at both sites. Therefore, no further evaluation of the industrial worker exposure pathway or revisions to the Report are necessary with regard to this comment.

SPECIFIC COMMENTS

3. Section 7.4.3.2, Tier 2 Risk Characterization, OW541 Risk Estimation, Page 7-14

Permittee Statement: "All SLHQs [Screening Level Hazard Quotients] are below 1, with the exception of thallium (1.4). Thallium also generated the greatest contribution to the HI (2). However, site-wide background for thallium (0.6 mg/kg) at CAFB approximates the site concentration (0.7 mg/kg). As a result, thallium is not considered a concern."

NMED Comment: As there were insufficient data to calculate a refined EPC, the maximum detection of thallium was retained as the EPC. The conclusions of the Tier 2 ecological risk evaluation for OW541 indicates that the maximum detected thallium concentration is essentially equal to the background reference value established in the Background Study. Due to the background UTL for thallium being based on one-half the highest reporting level there is uncertainty associated with natural levels of thallium in soil at CAFB. However, other lines of evidence were provided to address the uncertainty associated with the toxicity data for thallium. Therefore, it is agreed that thallium is not a concern with respect to ecological risk at OW541. No revisions to the Report are required with respect to this comment.

4. Table 12, Human Health Risk Screening of Soils for OW560

NMED Comment: The following issues were identified during review of data and risk evaluation calculations documented on Table 12 and must be addressed as follows:

a. The human health receptor risk factor values for mercury at OW560 were calculated using the incorrect EPC concentration (0.01 mg/kg) for the COPC. Use of the correct EPC (12 mg/kg) results in a higher hazard quotient for mercury for each receptor for initial and refined risk evaluation and a target organ hazard index of approximately 1.7 for the nervous system for the residential exposure scenario, warranting further evaluation. The construction worker hazard index for refined risk evaluation would also exceed NMED's target hazard index (1.0), warranting a target organ segregation analysis. Table 12 and any other affected Report tables must be revised to include the correct EPC for mercury and corrected risk calculations. Any uncertainties associated with use of 12 mg/kg as the EPC for mercury may also be discussed in the revised Report. In addition, address further evaluation of mercury at OW560. Revise the Report accordingly.

b. The hazard quotient for Gamma-Chlordane is listed as zero for the Construction Worker. Include the calculated numerical value for Gamma-Chlordane in the revised table.

5. Table 22, Summary of Tire 2 Screening-Level Hazard Quotients for OW541

NMED Comment: Provide the ProUCL file for the 0 to 10-foot depth interval for lead in support of the EPC (9.33 mg/kg) used during ecological risk evaluation for site OW541. Otherwise, provide clarification for use of the listed EPC value for lead. Revise 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 no later than **July 31, 2019.**

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

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED
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