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NEW MEXICO ENVIRONMENT DEPARTMENT **ENTERED**

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RON CURRY  
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Deputy Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

December 9, 2010

Colonel Stephen A. Kimball, Commander  
27th Special Operations Mission Support Group  
110 E. Sextant Avenue, Suite 1091  
Cannon Air Force Base, New Mexico 88103

**RE: NOTICE OF DISAPPROVAL  
CORRECTIVE ACTION COMPLETE PROPOSALS  
(SWMUS 2, 4, 6, 10, 50, 72, 75, 81, 82, 96, 98, 102, 105 AND 125)  
CANNON AIR FORCE BASE, NEW MEXICO, JUNE 2010  
EPA ID #NM7572124454  
HWB-CAFB-08-006**

Dear Col. Kimball:

The New Mexico Environment Department (NMED) has reviewed Cannon Air Force Base's (Permittee's), *Corrective Action Complete Proposals (SWMUs 2, 4, 6, 10, 50, 72, 75, 81, 82, 96, 98, 102, 105 and 125), Cannon Air Force Base, New Mexico* dated October 2010 (Proposals). NMED hereby disapproves the Proposals and provides the following comments.

Several errors relevant to risk screening occur repeatedly in the Proposals. The Permittee is directed to Table 9, Comparison of SWMU 82 Maximum Combined Surface and Subsurface Soil Concentrations (0-75 feet) to NMED SSLs, for an example of the recurring errors.

1. When no comparison criteria for a contaminant are provided in NMED Soil Screening Levels (SSLs), the Permittee must use comparison values provided in the U.S. Environmental Protection Agency Regional Screening Levels (RSLs). In Table 9, the Permittee used SSL values for naphthalene as a surrogate for 2-methylnaphthalene and inserted "NA" (not applicable) in place of SSL values for benzoic acid and

butylbenzylphthalate. Soil screening levels are available for the residential and industrial scenarios in the RSLs for these three chemicals. The Permittee must use RSLs when no comparison criteria are listed in the SSLs.

2. It is important to note that generic SSLs and RSLs were developed for evaluating direct exposure for the residential, industrial and construction worker scenarios. Maximum concentrations of contaminants detected at ten feet below ground surface (bgs) or less for residential and construction workers and at one foot bgs or less for industrial workers should be compared to the SSLs and RSLs and when assessing risk due to direct exposure. Maximum concentrations of four contaminants in Table 9, benzo(a)anthracene, bis(2-ethylhexyl)phthalate, chrysene and di-n-butylphthalate, occurred at depths greater than ten feet bgs. Use of the higher concentrations results in inflated risk calculations for direct exposure. Inhalation risk, however, should be assessed using the maximum detected concentration at a site and not limited to one foot bgs or ten feet bgs. The Permittee must use values from appropriate depths of soil for comparing detected concentrations to SSLs or RSLs and for calculating cumulative carcinogenic risk and noncarcinogenic hazard. A separate table listing detected concentrations at the appropriate depths may be helpful.
3. The Permittee indicated that pentachlorophenol is not a carcinogen. NMED considers pentachlorophenol to be a carcinogen in all receptor scenarios, as indicated in NMED SSLs. The Permittee must use accurate indicators of carcinogenicity and correct cumulative sums.
4. The Permittee failed to calculate hazard quotients for metals that were detected at concentrations exceeding Cannon Air Force Base (CAFB) background values in Table 9. The Permittee must include all metals that exceed background values in cumulative human health carcinogenic risk or noncarcinogenic hazard and, when appropriate, in ecological hazard index analyses.
5. The Permittee used default values in the Johnson and Ettinger (J&E) model for calculating risks and hazards. The soil texture at CAFB is known to be sandy loam. Values for sandy loam vadose zone soil dry bulk density, soil total porosity, and soil water-filled porosity are provided in the J&E lookup tables. The J&E User's guide provides a figure on page 48 for determining the average soil temperature at CAFB. The Permittee entered 0.001 for the vadose zone soil organic carbon fraction. The default value is 0.002. The Permittee should determine the soil organic carbon fraction for the soil at CAFB to determine a site-specific value. Lastly, the New Mexico target risk for carcinogens is 1.0E-05, not 1.0E-06, as indicated in the Notice of Disapproval dated October 12, 2010. The Permittee's use of default or incorrect values may result in inflated risk values. The Permittee must use correct values and site-specific data when they are available.
6. The reference concentration (RfC) for toluene is incorrect. The current datum provided in the Integrated Risk Information System (IRIS) database is 5.0 mg/m<sup>3</sup>. The Permittee must revise the J&E spreadsheets and subsequent hazard estimates accordingly.
7. In addition to the recurring errors described above, using Table 9 as an example, the Permittee listed incorrect concentrations for total petroleum hydrocarbons (TPH), 2-

butanone, methylene chloride, and toluene in Table 13. The values shown in Table 13 are off by a factor of 1,000. For example, the value for TPH shown in Table 13 is 3.38E-01 mg/kg. According to the RCRA Facility Investigation for 21 SWMUs, October 2007, the maximum concentration of TPH at SWMU 98 was 3.38E+02 mg/kg. The Permittee must revise Table 13 using correct concentrations of contaminants.

8. 2-methylnaphthalene and dieldrin are included in vapor intrusion scenarios. The inhalation toxicity data for these chemicals have been rescinded. Inclusion of these chemicals has no impact on the conclusions of risk presented in the Proposals. However, to avoid inflated risk analyses, the Permittee should avoid including chemicals with withdrawn inhalation toxicity data in future J&E models.
9. The Permittee failed to provide overall hazard indices (HI) for ecological receptors in Table 6 and in Table 14, as instructed in the Notice of Disapproval dated October 12, 2010. The Permittee must provide hazard indices for ecological receptors at SWMU 81 (Table 6) and SWMU 102 (Table 14).

The Permittee must revise cumulative risk calculations and incremental risk and hazard quotient values for vapor intrusion in Tables 3, 6, 8, 9, 10, 11, 13, 14, and 16.

The Permittee must submit a revised Proposal to NMED that addresses all of the comments included in this letter no later than February 28, 2011. The submittal must include an electronic copy with all changes presented in redline-strikeout in addition to the paper copies. The Permittee must include all modeling spreadsheets used to calculate the risks and hazards. Where outside chemical-specific or site-specific data are used in place of default data in the Johnson and Ettinger inputs, the Permittee must provide justification [e.g., source(s)] for the values.

Please contact Pat Stewart at (505) 476-6059, should you have any questions.

Sincerely,



James Bearzi  
Chief  
Hazardous Waste Bureau

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