



State of New Mexico  **ENTERED**  
ENVIRONMENT DEPARTMENT



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**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

August 7, 2017

Colonel Douglas W. Gilpin  
Commander, 27th Special Operations  
Mission Support Group  
110 E. Alison Avenue, Suite 1098  
Cannon Air Force Base

**RE: DISAPPROVAL  
RCRA FACILITY INVESTIGATION AT FL070 REVISION 1  
CANNON AIR FORCE BASE, NEW MEXICO  
EPA ID #NM7572124454  
HWB-CAFB-15-006**

Dear Colonel Gilpin:

The New Mexico Environment Department (NMED) has received the Cannon Air Force Base (Permittee) *RCRA Facility Investigation at FL070* (Report), dated December 20, 2016. NMED has completed review of the Report and hereby issues this Disapproval. The Permittee must address the following comments.

**COMMENTS**

**1. Section 5.5, Human Health Screening Evaluation, Pg. 5-7**

**NMED Comment:** The following issues pertaining to the human health risk screen were identified and must be addressed:

- a. Updates to the risk assessment were made in accordance with the comments presented in NMED's June 3, 2016 Disapproval letter. However, to offset the calculated risk for each human health exposure scenario (residential, industrial, and construction worker) for soil exposure, the risk contributable to background was

subtracted from the calculated risk. This is not an acceptable step in a RCRA-based risk assessment. The methodology utilized for the calculation of risk in the Report is more indicative of a CERCLA-based risk assessment. Remove any reference to the CERCLA-based risk screening procedure and revise all affected sections of the Report to conform to a RCRA-based risk assessment.

- b. Remove the cited reference to the site-specific cancer risk range of  $1E-04$  to  $1E-06$  from the Report. Revise affected sections of the Report to reflect the applicable NMED target risk level of  $1E-05$  for carcinogens and the hazard index (HI) of 1 for non-carcinogens as the applicable risk screen determination criteria.
- c. NMED's evaluation of human health risk for the soil-vapor exposure pathway utilizing the updated 2017 NMED Vapor Intrusion Screening Levels (VISL) indicates that the risk screen for soil vapor falls below the NMED risk criteria for the applicable residential and industrial exposure scenarios. However, when cumulative site risk is calculated for combined soil and soil vapor, the risk criteria for the residential exposure scenario is exceeded. In accordance with NMED's Risk Assessment Guidance for Site Investigations and Remediation (RA Guidance) the Report must be revised to include the calculation of risk for soil-vapor exposure and the calculation of cumulative human health risk for combined soil and soil-vapor exposure pathways. Revise all affected sections of the Report accordingly.
- d. NMED's evaluation of the cumulative risk screen evaluation indicates that the exceedance of the risk criteria for the residential exposure scenario is associated with metals concentrations detected in soil. Reevaluation of the metals concentration data and the use of the 95% upper confidence level of the mean (UCL) where applicable as a revised exposure point concentration would likely result in cumulative site risk below NMED's risk criteria for carcinogens and non-carcinogens for the residential exposure scenario.

## **2. Section 5.7, Site Conceptual Exposure Model, Soil-to-Groundwater Impacts, Pg. 5-10**

**NMED Comment:** An evaluation of potential soil-to-groundwater impacts was provided in the Report based on NMED's risk based SSLs for a dilution attenuation factor (DAF) of 20. The chemicals of concern (COCs) naphthalene, arsenic, and iron were detected at concentrations above NMED's soil-to-groundwater protective SSLs and were evaluated as COPCs. However, the physical-chemical properties of arsenic and iron render the COPCs fairly immobile. This fact, coupled with the relatively shallow detection depths (0 to 10 feet below ground surface (bgs)), make impacts to groundwater (300 feet bgs) unlikely. Additionally, calculation of UCLs for arsenic and iron would likely result in exposure point concentrations below the risk based SSLs for protection of groundwater for each COPC. No further evaluation of arsenic and iron with respect to potential soil-to-groundwater impacts is required at this time.

Sampling data is not sufficient to calculate a UCL for naphthalene; however, the maximum naphthalene concentration was reported at soil boring location SB03 at a depth of 7 feet bgs. Based on the depth-to-groundwater and the depth of the maximum detection, naphthalene is not expected to adversely impact groundwater. No further evaluation of naphthalene with respect to the soil-to-groundwater impact scenario is required at this time.

The sources (oil water separator and underground storage tank) of contamination have been removed from the site and the maximum detected concentration for TPH-diesel range organics (DRO) in soil (3,100 milligrams per kilogram (mg/kg)) falls below soil-to-groundwater SSLs for Total Petroleum Hydrocarbons (TPH) listed in Table 6-4, Groundwater and Soil-to-Groundwater Screening Levels for TPH Mixtures of the updated 2017 NMED RA Guidance for DRO (20,000 mg/kg for a DAF of 20). The residual TPH-DRO impacts in the subsurface are not expected to negatively impact groundwater.

### 3. Section 6.2, Conclusions and Recommendations, Soil-Vapor Issues, Pg. 6-3

**Permittee's Statement:** "Based on the absence of human health and ecological risks, FL070 is recommended for CAC [corrective action complete] with controls. Building 326 is currently vented for VOC fumes due to the nature of the work completed in the building. Therefore, controls are in place to eliminate the potential vapor intrusion pathway. Should the use of the building change from this current use, the vapor issue will be addressed at that time. Institutional controls will address the remaining TPH-DRO contamination at the site."

**NMED Comment:** TPH DRO-impacted soil at 50 to 70 feet bgs appears to be a continuing source for sinking and potentially pooling vapors with potential for vertical migration. This is evidenced by the maximum detected concentration of benzene at a depth of 110 feet bgs (68 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )) which exceeded NMED's 2015 VISL of 36  $\mu\text{g}/\text{m}^3$ . Therefore, the Report has not provided sufficient data to demonstrate vertical characterization of the site, nor have lines of evidence to rule out the potential for sinking and pooling vapors that may act as a source for vapor intrusion at the site been provided, resulting in a data gap. Additionally, complete contamination delineation due to site sampling access issues at the southern portion of the mapped contamination plume in close proximity to Building 326 was not possible during the assessment activities. Therefore, additional information is required for NMED to make a site status determination.

The data gaps must be addressed with additional soil vapor sampling at subsurface soil vapor sample collection points MPA, MPB, and MPC. The collected soil vapor samples must be analyzed for VOCs and total volatile petroleum hydrocarbons on a semi-annual schedule for eight sampling events or until it is adequately demonstrated that COC soil vapor concentrations are decreasing and/or the results of the sampling do not result in adverse cumulative site risk for four consecutive sampling events. Ventilation of the building as described in Section 5.4.1, Building 326 Ventilation System of the Report must continue.

Revise the Report conclusions to reflect the current data gaps and requirement for additional sampling. A work plan proposing continued soil vapor monitoring at the site must be provided to NMED for review in addition to the revised Report.

**4. Table F-2, Human Health Screening Evaluation Results Oil Water Separator and Leachfield 326 (FL070), Pg., 1-1**

**NMED Comment:** The following issues were identified in Table F-2 and must be addressed:

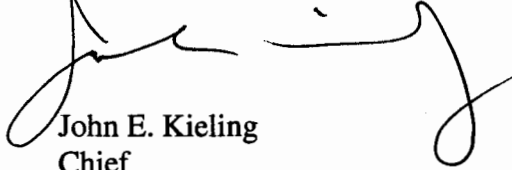
- a. Remove the "Background Screening Cancer Risk" and "Background Hazard" data columns and the resulting background risk calculations from the table for all exposure scenarios listed in Table F-2. Revise the risk screen accordingly.
- b. The total chromium SSLs for the residential, industrial, and construction worker exposure scenarios must be utilized in the risk calculation. Use of the SSL for chromium III underestimates site risk. The use of SSLs for Chromium III and VI require soil sample speciation analysis. Revise the table and risk screen calculations accordingly.

The Permittee must submit a revised Report that address 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 to NMED no later than **November 30, 2017**. The required work plan for additional soil vapor sampling must be submitted to NMED no later **December 29, 2017**.

Colonel Gilpin  
August 7, 2017  
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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  
A. Lafuente, CAFB  
R. Lancaster, CAFB  
S. Kottkamp, CAFB  
S. Palmer, CAFB

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