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**ENVIRONMENT DEPARTMENT**  
*Hazardous Waste Bureau*

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 Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

August 16, 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 SD012, SD017, AND SD020  
 CANNON AIR FORCE BASE, NEW MEXICO  
 EPA ID #NM7572124454  
 HWB-CAFB-16-010**

Dear Col. Hammons:

The New Mexico Environment Department (NMED) is in receipt of the Cannon Air Force Base (Permittee) *RCRA Facility Investigation at SD012 [Solid Waste Management Unit (SWMU) 85], SD017 [SWMU 96], and SD020 [SWMU 95]-Revision 1* (Report), received November 6, 2017. NMED has reviewed the Report and hereby issues this disapproval with the following comments.

**GENERAL COMMENT**

**1. Organization of Report Information Included as Figures and Tables in Report Text**

**NMED Comment:** Tables which do not have a specific table number designation were incorporated into the narrative portions of the Report (i.e., Section 5, Investigation Results risk screen evaluation results). The revised Report must be restructured to include all tables at the end of each Report section. The tables must be clearly labeled, numbered, include respective page numbers, and be referenced in the corresponding Report section.

## **SPECIFIC COMMENTS**

**2. Table 2-2, Summary of Chemicals in Soil for the 1986 IRP Phase II Report Stormwater Collection Point (SD012)**

**NMED Comment:** The industrial soil noncancer screening level (SSL) for total chromium (3.14E+05 milligrams per kilogram (mg/kg)), cited as the screening level for the evaluation of the 1986 investigation data at SD012, must be corrected to reflect the most conservative NMED cancer SSL 5.05E+02 mg/kg. The most conservative SSL for any chemical of concern (COCs) must always be utilized during screening level evaluations of concentration data. Revise the table and all affected sections of the Report accordingly.

**3. Table 2-3, Summary of Chemicals Detections in Soil for the 1990 IRP [Installation Restoration Program] RI [Remedial Investigation] Report Stormwater Collection Point (SD012)**

**NMED Comment:** The NMED SSLs for trivalent chromium for the residential (1.17E+05 mg/kg) and industrial (1.95E+06 mg/kg) exposure scenarios were utilized for evaluation of total chromium concentration data for the 1990 RI at SD012. The table must be revised to reflect the most conservative NMED total chromium SSLs for the residential exposure scenario (9.66E+01 mg/kg) and the industrial exposure scenario (5.05E+02 mg/kg) for evaluation of chromium concentration data. Screening levels for hexavalent and trivalent chromium may only be used when evaluating speciated chromium concentration data. The table and all affected sections of the Report must be revised accordingly.

**4. Table 2-5, Summary of Chemical Detections in Soil for the 1986 IRP Phase II Report Old Entomology Rinse Area (SD017)**

**NMED Comment:** The 2017 NMED SSLs for trivalent chromium for residential and industrial exposure were utilized for evaluation of total chromium concentration data for the 1986 Phase II investigation at SD017. The chromium concentration data must be evaluated in comparison to the most conservative NMED SSLs for total chromium. The table and all affected sections of the Report must be revised accordingly.

**5. Table 2-9, Summary of Chemicals Detections in Soil for the 1994 Supplemental RFI [RCRA Facility Investigation] Report Old Entomology Rinse Area (SD017)**

**NMED Comment:** The NMED SSLs for trivalent chromium for residential and industrial exposure were used for evaluation of total chromium concentration data for the 1994 RFI at SD017. The chromium concentration data must be evaluated with the most conservative NMED SSLs for total chromium. Additionally, a discrepancy was noted for the industrial SSL for toluene (6.11E+03 mg/kg), the correct screening level is (6.11E+04 mg/kg). The table and all affected sections of the Report must be revised accordingly.

**6. Table 2-10, Summary of Chemicals Detections in Soil for the 1990 IRP RI Report Northeast Stormwater Collection Point (SD020)**

**NMED Comment:** The NMED SSLs for trivalent chromium for residential and industrial exposure were utilized for evaluation of total chromium concentration data for the 1990 RI at SD020. The chromium concentration data must be evaluated in comparison to the most conservative NMED SSLs for total chromium. The table and all affected sections of the Report must be revised accordingly.

**7. Table 2-11, Summary of Chemicals Detections in Soil for the 1992 RI Report for 18 SWMUs NE Stormwater Drainage Area (SD020)**

**NMED Comment:** The following issues noted for Table 2-11 for the 1992 RI at SD020 must be resolved, and any affected Report sections must be revised accordingly.

- a. The NMED SSLs for trivalent chromium for the residential and industrial exposure scenario were utilized for the evaluation of total chromium concentration data. The chromium concentration data must be evaluated in comparison to the most conservative NMED SSLs for total chromium.
- b. The maximum chromium concentration reported for sample location 0951 for the 0 to 0.5 below ground surface (bgs) sample interval (115 mg/kg) exceeds the NMED SSL for the residential exposure scenario (96.6 mg/kg).
- c. The total petroleum hydrocarbon (TPH) concentration reported for sample 0951 for the 0 to 0.5 bgs sample interval (1,260 mg/kg) must be evaluated in comparison to the most conservative NMED TPH SSL for the residential exposure scenario (1,000 mg/kg) and the industrial exposure scenario (3,000 mg/kg) in conformance with, and as discussed in, Report Section 5.5.3.6, Evaluation of Petroleum Hydrocarbons at SD020.

**8. Section 5.5.1.1, Comparison of SD012 Site Inorganic Concentrations to Background, Page 5-6**

**Permittee Statement:** “Based on this comparison, cadmium, chromium, copper, lead, mercury, and selenium were considered COPCs [Constituents of Potential Concern] in surface soil and were screen[ed] against residential SSLs and assessed for cumulative risks as part of the mixed zone and surface soil datasets.”

**NMED Comment:** The comparison did not include a discussion of the evaluation of copper or mercury. Referenced Table E-4, Comparison of Maximum Detected Surface Soil Metal Concentrations at SD012 to Background Data, also did not include an evaluation of copper or mercury. Revise the statement or reevaluate the SD012 site data and revise any affected Report sections accordingly.

**9. Section 5.5.3.2, Comparison of SD020 Site Inorganic Concentrations to Background, Page 5-11**

**Permittee Statement:** “Beryllium - Maximum concentration (5.40E-01 mg/kg) exceeded the background UTL [upper tolerance level] (7.30E-01 mg/kg). Additionally, the population comparison indicated site barium concentrations exceeded background concentrations.”

**NMED Comment:** Based on the provided information, the maximum concentration of beryllium for subsurface soil did not exceed the applicable established soil background UTL. Correct the statement accordingly in the revised Report.

**10. Section 5.5.3.7, Refined Quantitative Risk Screening Evaluation for Soil [SD020], Page 5-17**

**NMED Comment:** The following discrepancies were identified for the information provided in Section 5.5.3.7 and must be addressed in the revised Report.

- a. The target organ hazard index (HI) values provided in the section table information for the residential exposure scenario and the referenced Table E-36, Human Health Quantitative Screening Evaluation Results for SD020 Residential Scenario-Mixed Zone Soil target organ HI values, do not correspond to each other. Reevaluate the human health risk assessment result information for SD020 and revise all affected Report sections accordingly.
- b. Referenced Table E-37, Human Health Quantitative Screening Evaluation Results for SD020 Construction Worker Scenario-Mixed Zone Soil target organ HI values do not correspond to the section table information for the refined target organ risk evaluation. Table E-37 indicates the HI for the urinary system (2.10) and the nervous system (1.08) exceeded the NMED HI risk criteria of 1, which does not agree with the conclusions of the section for the construction worker exposure scenario. Resolve the discrepancy in the revised Report.

**11. Section 6.1.2, Arsenic and Selenium Data at SD012 and SD017, Page 6-1**

**Permittee Statement:** “The arsenic data included in the 1990 RI was also questioned for two additional SWMU’s [Solid Waste Management Units] included in the 1990 RI, SWMU 111 [former unlined pit] and 112 [Oil Water Separator No. 2336]. Arsenic was resampled at these facilities and the arsenic data from the 1990 RI was deemed not valid in a status report for these SWMU’s. Therefore, the data from this metals investigation has been deemed invalid at three of the four sites included in the 1990 RI. NMED has agreed with this assessment of the data in all three occurrences.”

**NMED Comment:** NMED’s final SWMU status determination as provided in the May 2017 NMED *Fact Sheet/Statement of Basis, Request for Corrective Action Complete Status for Six Solid Waste Management Units (SOB)* which included SWMU 111 and SWMU 112 and

NMED's September 2, 2015 *Approval with Direction SWMU 111/112 Status Report* (Status Report Response) response letter only indicated arsenic concentrations fell below NMED's residential SSLs. Remove the statement "NMED has agreed with this assessment of the data in all three occurrences" from the revised Report or provide corresponding document citation(s) information to substantiate the statement.

**12. Section 6.1.2, Arsenic and Selenium Data at SD012 and SD017, Page 6-2**

**Permittee Statement:** "Selenium would be subject to the same inter-elemental interference that was identified with regard to arsenic sampling completed at part of the 1990 RI at both SD012 and SD020. NMED concurred with subsequent investigations that concluded the arsenic data was not valid for three of four sites included in the 1990 RI report."

**NMED Comment:** Provide corresponding document reference information that specifically cites the subsequent investigations were NMED provided concurrence with the Permittee's determination that arsenic data collected during the 1990 RI was invalid or remove the statement "NMED has agreed with this assessment of the data in all three occurrences" from the revised Report. Prior NMED response information provided in the SOB and Status Report Response for SWMU's 111 and 112 only determined arsenic concentrations at each site fell below NMED residential SSLs.

**13. Section 6.1.5.3, Refined Quantitative Risk Assessment [SD020], Page 6-5**

**Permittee Statement:** "The site-specific soil exposure excess cancer risk was 6E-07 for construction workers and 6E-07 for residents. The potential receptor refined cancer risk are considered acceptable because they fall below the NMED target cancer risk of 1E-05. The HI was estimated at 1.31 for construction workers and 1.27 for residents. The target organ assessment showed no target organ system hazard exceeded 1. Based on the 95% UCL concentrations, soil at SD020 is unlikely to pose unacceptable excess cancer risks for construction workers or residents. Based on the refined risk assessment, the construction worker and residential pathways are considered to be incomplete."

**NMED Comment:** The target cancer risk criteria and noncancer HI values provided in the statement do not correspond to the risk evaluation result values provided in Table E-36, Table E-37, or any other provided risk evaluation result information for SD020. Reevaluate the provided risk evaluation information and revise all affected Report sections accordingly.

**14. Section 6.2, Conclusions and Recommendations, Page 6-5**

**Permittee Statement:** "No unacceptable human health or ecological risks were identified at SD020. Therefore, SD020 is recommended for CAC without controls."

**NMED Comment:** The risk evaluation information discrepancy noted for the information provided in Report Section 5.5.3.7, Section 6.1.5.3, and Tables E-36 and E-37 must be resolved to support the human health risk evaluation conclusions for SD020. The Report

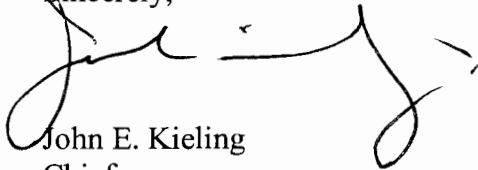
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must be revised to include accurate and complete information in order for NMED to complete its review of the investigation for SD020. Revise the Report accordingly.

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 on or before **November 30, 2018**.

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 a long horizontal stroke.

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  
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