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ENTERED



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Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 2, 2020

Colonel Robert A. Masaitis
Commander, 27th Special Operations Wing
100 Air Commando Way, Suite 100
Cannon Air Force Base
New Mexico 88103-5214

**RE: DISAPPROVAL
WORK PLAN ADDENDUM FACILITY-WIDE LONG-TERM MONITORING, MAINTENANCE,
AND INSPECTIONS AT MULTIPLE SITES
CANNON AIR FORCE BASE, NEW MEXICO
EPA ID #NM7572124454
HWB-CAFB-19-003**

Dear Colonel Masaitis:

The New Mexico Environment Department (NMED) is in receipt of the Cannon Air Force Base (Permittee) *Work Plan Addendum Facility-Wide Long-Term Monitoring, Maintenance, and Inspections at Multiple Sites* (WPA) dated September 25, 2019. NMED hereby issues this Disapproval. NMED's comments are provided in the attachment to this letter. The Permittee must address all comments in the attachment.

NMED's March 19, 2019 *Interim Facility-Wide Groundwater Monitoring Plan* correspondence required the submittal of an updated *Facility Wide Long-Term Groundwater Monitoring Plan* (FLGMP) the Permittee instead submitted this WPA. The last update to the FLGMP was approved by NMED in February 2011; therefore, the Permittee must submit an updated FLGMP. The FLGMP must include current facility information and updates to the conceptual site model, the groundwater monitoring plan, and the landfill inspection and maintenance plan.

Colonel Masaitis
CAFB 2019 WPA
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The Permittee must submit an updated FLGMP for NMED approval. All comments included in the attachment to this Disapproval must be addressed in the FLGMP. 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 monitoring plan showing all changes made to the monitoring plan. An updated FLGMP that addresses the comments included in the attachment to this letter must be submitted to NMED no later than **April 30, 2021**.

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

Sincerely,

Kevin
Pierard

Digitally signed by
Kevin Pierard
Date: 2020.12.02
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Kevin M. Pierard, Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
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M. Fuchs, CAFB
C. Chavez, CAFB

File: CAFB 2020 and Reading

Attachment

NMED COMMENTS

GENERAL COMMENTS

1. Requirement to Submit an Update to the Facility Wide Long-Term Groundwater Monitoring Plan (FLGMP)

NMED Comment: NMED's March 19, 2019 *Interim Facility-Wide Groundwater Monitoring Plan* correspondence required the submittal of an updated *Facility Wide Long-Term Groundwater Monitoring Plan* (FLGMP) the Permittee instead submitted this WPA. The last update to the FLGMP was approved by NMED in February 2011; therefore, the Permittee must submit an updated FLGMP. The FLGMP must include current facility information and updates to the conceptual site model, the groundwater monitoring plan, and the landfill inspection and maintenance plan. The monitoring plan must be revised accordingly.

The Permittee must continue periodic groundwater monitoring and landfill inspection and maintenance in accordance with the NMED-approved July 2014 WPA until NMED has approved the required update to the FLGMP.

2. Required Permittee Document Certification Statement

NMED Comment: The FLGMP must include the following 40 Code of Federal Regulation (CFR) Section 270.11(d)(1) statement for signatories to reports and work plans:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Failure to include the signed statement in the FLGMP, or any other submittal to NMED, may result in rejection of the document.

3. Page Numbers Requirements

NMED Comment: Every page of every submittal, including all pages within sections and appendices, must be numbered either sequentially or in some other logical format. Revise the monitoring plan as necessary.

4. Long-Term Groundwater Monitoring Data Quality Objectives and Quality Assurance and Quality Control Requirements

NMED Comment: The following comments must be addressed in the updated FLGMP as follows:

- a. The Permittee must provide the name of the contract laboratory(-ies) that will perform groundwater sample analysis and discuss the laboratory's certification. The laboratory NELAP and/or DOD-ELAP certification must be provided in an appendix of the FLGMP. The monitoring plan must be revised accordingly.
- b. The FLGMP must include target compound list tables that list all COCs and their method detection limits (MDLs). The Permittee must ensure that COC MDLs are less than applicable background, screening, and regulatory cleanup levels for each respective COC. The Permittee must also ensure that practical quantitation limits (PQLs) for each COC do not exceed 20 percent of the cleanup, screening, or background levels where achievable. The Permittee must provide a discussion for PQLs that cannot meet this target. Sample analysis data summary tables provided in the annual groundwater monitoring and landfill inspection reports must include MDLs and PQLs for all COCs. Detection limits that exceed applicable background, screening, and regulatory cleanup levels are data quality exceptions and must be noted in the FLGMP and must be addressed in each groundwater monitoring report. The monitoring plan must be revised accordingly.
- c. The FLGMP must include a detailed discussion of data quality objectives and systematic quality assurance and quality control (QA/QC) checks and procedures that will be used to evaluate and validate field and sample analytical data. Applicable QA/QC requirements for field and sample analytical data are outlined in CAFB's 2018 RCRA Hazardous Waste Permit (Permit), Sections 4.3 through 4.5. Systematic QA/QC protocols and procedures proposed in the FLGMP must conform to the Permit requirements for sampling methods and QA/QC procedures. Documentation of the QA/QC data review and validation must be discussed in each annual groundwater monitoring report for each sampling event. Supporting QA/QC documentation, such as sample analysis data validation reports, must be included as an appendix in each respective annual groundwater monitoring report. The monitoring plan must be revised accordingly.

SPECIFIC COMMENTS

5. Section 2.7.8, 2018 Biennial Sampling Event, Pages 2-13 through 2-14

Permittee Statement: “Groundwater sampling analytical results from May/June 2018 indicated that there are no new contaminant releases to groundwater. Furthermore, new or current base activities do not pose a threat to groundwater.”

NMED Comment: The Permittee’s statement is misleading. The Permittee has not yet tested appropriately for the presence of 1,4-Dioxane. In addition, the August 2018 *Final Site Inspection Report Cannon Air Force Base, NM [New Mexico] Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide* provides documentation of reported concentrations of PFAS at various CAFB groundwater monitoring wells sampled during the AFFF site inspection. Specifically, perfluorooctonic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were detected in ten groundwater monitoring wells at Cannon Air Force Base (CAFB). Reported concentrations of PFOA and PFOS exceeded the established United States Environmental Protection Agency Lifetime Health Advisory (LHA) of 0.07 micrograms per liter at six of the sampled monitoring wells at the eastern and southeastern portion of CAFB during initial investigation.

Supplemental investigation documented in the March 2019 *Addendum 01 to the Final Site Inspection Report Cannon Air Force Base, NM [New Mexico] Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide (SIR Addendum 01)* confirmed the exceedance of the LHA at six groundwater monitoring wells, new monitoring well MW-Y, and at least three off-base down-gradient sampling locations. SIR Addendum 01 Section 5.0, Conclusions and Summary also stated, “[a] release of AFFF was confirmed in the Basewide Groundwater impacting groundwater that is known to be a source of drinking water, which could create a potential hazard to human health.”

PFOA and PFOS are listed as 20.6.2.7.T(2) New Mexico Administrative Code (NMAC) toxic pollutants and are regulated in groundwater in New Mexico. Due to the detection of these contaminants in groundwater at CAFB, further investigation of confirmed PFAS contamination is required. The FLGMP must address the confirmed release of PFAS at CAFB and include sampling of groundwater monitoring wells for PFAS as an interim measure until adequate PFAS source zone investigations are implemented at CAFB and the surrounding area. The monitoring plan must be revised accordingly.

6. Table 2-1, Monitoring Well Construction Details, Page 1 of 1

NMED Comment: The following monitoring well construction details table data issues must be addressed in the updated FLGMP as follows:

- a. A discrepancy in the reported top and bottom of screen depth was noted for monitoring well MW-Fa. The monitoring well construction detail table included in the FLGMP must include accurate well construction details for all wells.
- b. A discrepancy in the reported bottom of screen depth was noted for monitoring well MW-X. The monitoring well construction detail table included in the FLGMP must include accurate well construction details for all wells.

7. Section 3.1, Groundwater Monitoring Sampling Plan, Pages 3-1

Permittee Statement: "In response to NMED's requests, groundwater samples will be collected annually from monitoring wells MW-Ca, MW-Fa, MW-Ga, MW-Na, MW-Oa, MW-Pa, MW-Rb, MW-Sa, MW-Ta, MW-Ua, and MW-X following NMED approval of this WPA."

NMED Comment: The following comments must be addressed in the updated FLGMP as follows:

- a. Monitoring wells MW-A, MW-B, MW-Ca, MW-D, MW-E, MW-Fa, MW-Ga, MW-H, MW-Na, MW-Oa, MW-Pa, MW-Rb, MW-Sa, MW-Ta, MW-Ua, MW-V, MW-W, and MW-X must be sampled annually for a minimum of two years or as further directed by NMED. The monitoring plan must be revised accordingly.
- b. New monitoring well MW-Y must be added to the monitoring plan and sampled annually for a minimum of two years or as further directed by NMED. The monitoring plan must be revised accordingly. Submittal of work plans to NMED for approval for all monitoring well installations in response to any suspected or confirmed COC contamination at CAFB is always required. Failure to submit a work plan for monitoring well installation for NMED approval may result in invalidation of the data collected from the monitoring well(s), and potentially, may require abandonment and replacement of the monitoring well(s).
- c. Groundwater samples collected from all nineteen monitoring wells must be analyzed for all COCs and water quality parameters proposed in the WPA. In addition, sample analysis for PFAS COCs must be conducted for each monitoring well for a minimum of two years or as further directed by NMED. A target PFAS COCs sample analysis suite and preliminary screening levels for PFOA, PFOS, and perfluorohexanesulfonic acid are provided and discussed in NMED's June 2019 *Risk*

Assessment Guidance for Site Investigations and Remediation (RA Guidance), Section 5.3, Polyfluoroalkyl and Perfluoroalkyl Compounds and must be used to establish the required groundwater sample analytical suite for PFAS at each monitoring well. The monitoring plan must be revised accordingly.

- d. The results of the annual groundwater monitoring and landfill inspection must be reported in an annual groundwater monitoring and landfill inspection report as originally proposed in the WPA.

8. Section 3.1, Groundwater Monitoring Sampling Plan, Pages 3-1

Permittee Statement: “Prior to groundwater sampling activities, a full round of water levels from all twenty-one monitoring wells associated with this LTM investigation using an electronic water level indicator.”

NMED Comment: All twenty-one monitoring wells and new monitoring well MW-Y must be proposed for groundwater level gauging. Groundwater levels must be measured at all twenty-two monitoring wells with a groundwater interface probe that is also capable of detecting and measuring non-aqueous phase liquids. The monitoring plan must be revised accordingly.

9. Section 3.4, Investigative Derived Waste [IDW], Page 3-3

NMED Comment: The identified issues must be addressed as follows in the FLGMP:

- a. The Permittee stated, “[m]onitoring well analytical results from the associated samples will be used to characterize the IDW by applying the Rule of Twenty.” As previously directed in NMED’s December 5, 2017 *Approval with Modifications 2016 Biannual Groundwater Monitoring Report and Annual Landfill Inspections Report*, IDW groundwater must not be evaluated using the “Rule of Twenty”. As reclarification, United States Environmental Protection Agency (USEPA) Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) analysis procedure and 40 CFR 261.24 define a liquid waste as the waste extract. For solids, extraction is performed by use of an extraction agent equal to 20 times the weight of the solid phase. Therefore, use of the “Rule of Twenty” for evaluation of the RCRA toxicity characteristic only applies to waste that is a solid. It does not apply to liquid waste. Representative sample analysis results for groundwater samples collected at site monitoring wells must be screened directly against established 40 CFR 261.24 Table 1, Maximum Concentrations of Contaminants for Toxicity Characteristic, regulatory levels when potentially toxic constituents are detected in IDW water. The proposal to use the “Rule of Twenty” for evaluation of the toxicity characteristic for IDW water in the FLGMP is inappropriate and must not be included in the monitoring

plan. Furthermore, hazardous waste characterization also requires representative waste analysis for corrosivity, ignitability, and reactivity prior to a disposal determination. The Permittee must address how the waste analysis for corrosivity, ignitability, reactivity, and the toxicity characteristic will be appropriately conducted. The monitoring plan must be revised accordingly.

- b. The Permittee stated, "If analytical results are less than the USEPA MCLs [Maximum Contaminant Levels], NMGWQS [New Mexico Groundwater Quality Standards], and/or RSLs [Regional Screening Levels], then IDW will be discharged to the ground surface from where the aqueous IDW was generated." IDW groundwater or decontamination water must not be discharged to the ground surface at CAFB without prior authorization by NMED as required by 20.6.2 NMAC groundwater protection standards. Additionally, PFOA, PFOS, and perflourobutanesulfonic acid have been detected at various groundwater monitoring wells at CAFB. PFOA and PFOS have been reported at concentrations in exceedance of the LHA at seven monitoring wells and are regulated as 20.6.2.7.T(2) NMAC toxic pollutants in groundwater in New Mexico. Therefore, waste characterization sampling for PFAS is required for a complete IDW disposal determination. Additionally, any disposal of IDW water containing PFAS to the ground surface at CAFB would constitute a release of the contaminants to the environment and would require NMED notification and investigation of the release. Based on the confirmed PFAS contamination documented in groundwater, IDW water must be disposed at an appropriate off-site disposal facility. The FLGMP must propose off-site disposal of IDW groundwater and decontamination water. The monitoring plan must be revised accordingly.
- c. Disposal of IDW must be reported in each annual groundwater monitoring report. All waste disposal manifest documents, waste characterization sample results, or other documentation pertaining to IDW disposal for the reporting year must be included in an appendix to the respective groundwater monitoring report. The monitoring plan must be revised accordingly.

10. Section 3.5, Monitoring Well Inspection, Pages 3-3 through 3-4

NMED Comment: In addition to proposed monitoring well inspection and as previously proposed in the 2014 WPA, the FLGMP must include a proposed monitoring well rehabilitation program that includes systematic procedures for evaluating groundwater monitoring wells if damage or other well performance issue are identified during monitoring well inspection. The monitoring plan must be revised accordingly.

11. Table 3-1, Groundwater Level Measurement and Sampling Summary, Page 1 of 1

NMED Comment: The appropriate 1,4-Dioxane sample analysis method is USEPA Method 8270 with Selected Ion Monitoring (SIM). The FLGMP must specify the use of sample analysis Method 8270 SIM for 1,4-Dioxane analysis.

12. Section 5.2, Groundwater Level Measurement and Sampling Summary, Page 5-1

Permittee Statement: "All site inspections will be recorded on the Landfill Cover System Inspection forms, as provided in Appendix C of the WPA."

NMED Comment: The Landfill Cover System Inspection forms are provided in Appendix B of the WPA. Ensure the correct appendix is referenced in the FLGMP. The monitoring plan must be revised accordingly.

13. Section 5.3, Maintenance and Repair, Pages 5-1 through 5-6

NMED Comment: The Permittee has presented some tables mixed in with the WPA text and some separate from the text. This causes confusion and difficulty in navigating the document during review. For example, Tables 5-1, 5-2, and 5-3 were included in the section text while Tables 3-1, 3-2, and 3-3 were presented at the end of the section discussion. All tables must be presented at either the end of the section discussion or in a "Tables" section of a work plan or report. Revise the monitoring plan accordingly.

14. Section 5.3.2.1, Maintenance and Repair [Landfill No. 25 (LF025)], Pages 5-3 through 5-4

Permittee Statement: "Landfill cover (earth cover in select areas with vegetative cover), fences, berms (LF025), and/or signage are present at these landfill sites."

NMED Comment: The section only addresses inspection and maintenance activities for one landfill (LF025). Ensure that the section discussion is accurate in the FLGMP. The monitoring plan must be revised accordingly.

15. Section 5.3.3, LF005 [Landfill No. 005] and SI101 [Sewage Lagoons Landfill], Pages 5-4 through 5-6

Permittee Statement: "FL005 and SI101 are addressed in this plan together, due to similar features. A landfill cap (with vegetative cover), fence, drainage ditches (SI101), and signage are present at LF005 and SI101. The inspection and maintenance requirements for SI101 are summarized in Table 5-3."

NMED Comment: LF005 Cell No. 3 is a hazardous waste disposal cell. The integrity of Cell No. 3 and the surrounding portions of LF005 must be regularly inspected and maintained. Ensure LF005 is referenced on the table summarizing landfill inspection and maintenance requirements included in the updated FLGMP. The monitoring plan must be revised accordingly.

16. Section 6.2, Data Reporting, Page 6-2

NMED Comment: The identified issues must be addressed as follows in the FLGMP:

- a. As required by Permit Section 4.5.5, Laboratory Deliverables, the analytical data packages submitted to NMED in annual groundwater monitoring reports may be submitted as EPA-established Level II analytical support protocol. However, the laboratory analytical data package must be prepared in accordance with EPA-established Level III or IV analytical support protocol and must be kept on file by the contract laboratory and submitted to the Permittee upon request. The monitoring plan must be revised accordingly.
- b. All sample analytical data must include a column that indicates which analytical report the specific sample information can be found. A link to the analytical report must be provided in the tables. The additional requirement must be included in the revised monitoring plan.

17. Section 6.4.1, Comparison to Regulations, Page 6-3

NMED Comment: As required by Permit Section 3.3.1, Groundwater Cleanup Levels, the applicable cleanup levels for evaluation of all COCs in groundwater at CAFB must be the New Mexico Water Quality Control Commission (WQCC) groundwater quality standards, 20.6.2.3103 NMAC, the cleanup levels calculated for toxic pollutants listed in 20.6.2.7.T(2) NMAC, and the drinking water maximum contaminant levels (MCLs) adopted by EPA under the federal Safe Drinking Water Act (42 U.S.C. 300f to 300j-26). If both a WQCC groundwater quality standard and an MCL have been established for an individual COC, then the lower of the levels shall be the cleanup level for that substance. The most recent version of the NMED's Tap Water Screening Levels listed in Table A-1 of the June 2019 NMED RA Guidance (as updated) shall be used to establish the cleanup level if neither a WQCC standard or an MCL has been established for a specific COC. In the absence of an NMED tap water screening level then the EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites (RSLs, as updated) for tap water shall be used as the cleanup level. As an exception, hexavalent chromium concentrations must be evaluated with the WQCC groundwater quality standard for dissolved chromium. The updated FLGMP must reflect the required groundwater cleanup level standards. The monitoring plan must be revised accordingly.