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NOTICE OF VIOLATION

Certified Mail - Return Receipt Requested

November 30, 2018

Ms. Suzanne Bilbrey, P.E.
Director, Environmental Center of Excellence
AFCEC/CZ
Air Force Civil Engineer Center
2261 Hughes Ave., Ste 155
Lackland AFB, TX 78236-9853

RE: Notice of Violation, Cannon Air Force Base, Soil and Groundwater Contamination with Per- and Poly-Fluoroalkyl Substances ("PFAS")

Dear Ms. Bilbrey:

The New Mexico Environment Department ("NMED") has determined that the above referenced facility is operating in violation of the New Mexico Water Quality Act ("WQA") and its correlated Ground and Surface Water Protection Regulations ("Regulations"), 20.6.2 NMAC. Please be advised that prompt action is required as described herein.

NMED is in receipt of your October 26, 2018 letter in response to the NMED letter of September 26, 2018 in which NMED required the U.S. Air Force ("Air Force") to take actions required under 20.6.2.1203 NMAC. The letter fails to comply with several of the requirements specified in NMED's September 26, 2018 letter.

While NMED understands that the Air Force is addressing PFAS contamination at its installations pursuant to a nationwide program, the Air Force must nonetheless comply with specific requirements of New Mexico law and regulations.

The WQA and the Regulations provide explicit authority to NMED to prevent and abate water pollution. The WQA at NMSA 1978, § 74-6-2(B) defines the term "water contaminant" as "any substance that could alter, if discharged or spilled, the physical, chemical, biological or radiological qualities of water." As such, all of the PFAS, and not solely PFOA and PFOS,

compounds that the Air Force has discharged into groundwater are “water contaminants” under New Mexico law.

The WQA defines the term “water pollution” as “introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or to unreasonably interfere with the public welfare or the use of property.” NMSA 1978, § 72-6-2(C). The statutory definition is not limited to human health, and explicitly includes animal and plant life and property.

To the extent that the PFAS water contaminants emanating from Cannon Air Force Base (“CAFB”) have injured or threaten to injure human health, animal or plant life, or property, or have unreasonably interfered with public welfare or the use of property such as water wells, farms and dairies, such injuries and interferences are clearly subject to the abatement requirements of the Water Quality Act and the Ground and Surface Water Protection Regulations.

Specific deficiencies in the Air Force’s October 26, 2018 response are listed below.

1. **The Air Force has failed to sample all water supply wells (domestic drinking water, irrigation, dairy, industrial) located southeast of, and within four miles of, the base.** NMED recognizes that not all well owners in the August to October 2018 time frame may have elected to have their wells tested when initially contacted by the Air Force. Our letter of September 26, 2018 therefore requested that the Air Force provide documentation of due diligence that well owners were in fact contacted, advised of the need for testing, and made an informed judgment not to have their well(s) tested. This documentation was not provided to NMED. This testing is necessary to define the extent of groundwater contamination by PFAS emanating from CAFB, and to identify locations where PFAS water contaminants have injured or threaten to injure human health, animal or plant life, or property, or have unreasonably interfered with public welfare or the use of property. Drinking water is not the only potential pathway by which humans may be exposed to PFAS contaminants emanating from CAFB. PFAS in irrigation water can bioaccumulate in crops and in livestock that eat contaminated crops. PFAS in water used by livestock also can bioaccumulate in livestock. Humans who consume meat from contaminated livestock or dairy products including milk and cheese, for example, generated from contaminated livestock can therefore be exposed to PFAS contaminants emanating from CAFB via the food web. Within 15 days of receipt of this Notice of Violation (“NOV”), the Air Force shall collect PFAS samples from all irrigation, dairy and industrial water supply wells that are located southeast of and within four miles of CAFB, within the identified zone of the paleochannels, that have not been previously sampled by the Air Force and reported to NMED and for which well owner access approval has been granted. A complete report of all results from this sampling shall be submitted to NMED no later than January 15, 2019.
2. **The Air Force has failed in its most recent water well testing to analyze and report all PFAS compounds that are included in EPA Test Method 537.**

As discussed above, all PFAS compounds that CAFB has discharged into groundwater are “water contaminants” under New Mexico law. The complete analysis for all PFAS compounds, will allow the Air Force, NMED, and others to track the entire suite of contaminants and provide sound, science-based decisions on additional monitoring and interim and final treatment options moving forward. Receiving results from only two contaminants, PFOS and PFOA, as the Air Force is now reporting, may unnecessarily hinder the Air Force and NMED understanding and approach to cleanup. Within seven days of receipt of this NOV the Air Force shall submit analytical results for all PFAS compounds that are included in EPA Test Method 537. All future testing of well water samples shall include all analytes in the recently published EPA Test Method 537.1. PFAS compound perfluorobutanoate (PFBA, also known as perfluorobutanoic acid, perfluorobutyric acid and heptafluorobutyric acid) is detectable by EPA Test Method 537.1 and laboratories typically report and quantitate PFBA in a Method 537.1 analysis if it is present. All future PFAS testing of soil and water on and near CAFB shall include quantification and reporting of PFBA.

3. The Air Force has failed to submit a proposal, subject to NMED approval, to conduct a hydrogeologic investigation to define the extent of groundwater contamination by PFAS emanating from CAFB.

In order to satisfactorily and effectively conduct a hydrogeological investigation, the Air Force shall participate in a hydrogeology technical working group (“TWG”) that includes staff from the Air Force Civil Engineering Center, NMED, New Mexico Department of Health (“NMDOH”), New Mexico Department of Agriculture (“NMDA”), EPA Region 6, and the U.S. Geological Survey. The hydrogeology working group shall assemble and review all published literature on groundwater conditions in the vicinity of CAFB and shall perform groundwater modeling on plume migration and plume capture by existing off-Base water supply wells. The hydrogeology working group shall identify data gaps, and the Air Force shall submit work plan(s), subject to NMED review and approval, as necessary to fill the identified data gaps. The hydrogeology working group shall also make recommendations for a systematic groundwater monitoring program that includes periodic testing of wells located within and outside of the PFAS contamination plume. Funding for the operation of the TWG, filling of data gaps, and groundwater monitoring must be borne by the Air Force. The initial report, that will address a) identification of data gaps, b) proposals for modeling, c) proposals for plume capture and d) the specifications and schedule for groundwater monitoring, from the TWG shall be submitted to NMED no later than 90 days from the date of this letter.

4. The Air Force has failed to correct the erroneous statement in Section 4.2.2 of the CAFB Site Investigation Report.

The Air Force asserts that, “[t]he installation water supply wells were previously sampled as part of the Third Unregulated Contaminant Monitoring Rule for PFAS with no detections reported.” The term “PFAS” includes many chemical constituents, not just PFOS and PFOA. PFAS compounds perfluorobutanesulfonic acid (“PFBS”) and perfluorohexanesulfonic acid (“PFHxS”) were detected in CAFB water supply wells 3, 8,

9 and 12, and in a sample from the CAFB drinking water treatment plant in 2016 and 2017. Within seven days of receipt of this NOV, the Air Force shall submit a revised and corrected Site Investigation Report that makes reference to the detections of PFBS and PFHxS in CAFB water supply wells and in the drinking water treatment plant.

Since the issuance of NMED's September 26, 2018 letter, and pursuant to 20.6.3.1203.A(5) NMAC, additional actions are required for the Air Force to contain and remove or mitigate the damage caused by the discharge of PFAS into groundwater at CAFB. Within 30 days of receipt of this NOV, the Air Force shall submit for NMED review and approval a work plan to accomplish the following:

- A. Identification and timeline of options to be evaluated as potential short-term corrective measures for affected dairies, including water hauling and water treatment of contaminated well sources for both livestock and irrigation of crops.**
- B. In conjunction with the findings of the TWG, evaluation of the feasibility of installing one or more treatment systems on contaminated water supply wells.**

This Notice of Violation is NMED's final effort to obtain the Air Force's voluntary compliance in these matters. Failure to comply with this Notice of Violation may result in NMED's issuance of an Administrative Compliance Order that can assess a civil penalty in accordance with the provisions of NMSA 1978, Section 74-6-10. Civil penalties may be assessed for up to \$15,000 per day for each violation of the WQA § 74-6-5 and any regulation promulgated pursuant to that section. Civil penalties may also be assessed for up to \$10,000 per day for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision.

Nothing in this letter shall be construed as relieving the Air Force of the obligation to comply with all requirements of the Regulations, the WQA, and other applicable federal, state, and local laws, regulations, permits or orders.

If you have any questions regarding this letter, please contact Dennis McQuillan, NMED Chief Scientist at (505) 827-2140, or me, at (505) 827-2919.

Sincerely,



Michelle Hunter, Chief
Ground Water Quality Bureau

MH:DM

enc: New Mexico Ground and Surface Water Protection Regulations (in part); Section 20.6.2.1203 NMAC.

Ms. Bilbrey
November 30, 2018
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