For Immediate Release
July 24, 2019

Contact: Maddy Hayden, Communications Director
New Mexico Environment Department
505.231.8800 | maddy.hayden@state.nm.us

Matt Baca
New Mexico Office of the Attorney General
505.270.7148 | mbaca@nmag.gov

State files preliminary injunction against Air Force to compel it to address PFAS contamination

ALBUQUERQUE — Today, the New Mexico Environment Department (NMED) and Attorney General Hector Balderas filed a request in federal court for emergency relief from environmental contamination caused by per- and poly-fluoroalkyl substances (PFAS).

"I am extremely frustrated that the Air Force has not been responsive to protecting the health and safety of New Mexican families by addressing years of environmental pollution," said Attorney General Hector Balderas. "Because of their delay and failure to act, Secretary Kenney and I are asking the Court to ensure timely protection of New Mexico's people, wildlife, and environment from this ongoing and devastating pollution."

"We will not allow this contamination to further threaten New Mexican's health and the environment," said NMED Secretary James Kenney. "In the absence of responsible and timely action on the part of the Air Force, the state will continue to seek whatever legal avenues available to compel clean up."

The state is requesting the court order the Air Force to immediately begin delineating the groundwater plumes caused by decades of use of a PFAS-based firefighting foam at Cannon and Holloman Air Force bases by conducting regular groundwater and surface water sampling. The state is also requiring the Air Force provide alternative water sources and water treatment options to New Mexicans affected by the contamination, voluntary blood tests for residents who may have been exposed to PFAS and additional documentation on the extent of contamination around the bases.

NMED and the Attorney General sued the Air Force in April. The preliminary injunction requested today would ensure the health of New Mexicans and the environment are protected as the case proceeds.

The agencies also filed an amended version of the original complaint today to reflect violations of the federal Resource Conservation Recovery Act pursuant to authorities granted to the New Mexico by the U.S. Environmental Protection Agency. These claims are in addition to violations of the State's Hazardous Waste Act.

PFAS are a large group of toxic, manmade chemicals with numerous adverse health impacts, including increasing the risk of some cancers; affecting the growth, learning and behavior of children; and interfering with the immune system. For more information on PFAS, please visit https://www.atsdr.cdc.gov/pfas/.

###

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW MEXICO

STATE OF NEW MEXICO, *ex rel.* HECTOR BALDERAS, Attorney General, and the NEW MEXICO ENVIRONMENT DEPARTMENT, Plaintiffs, v. THE UNITED STATES and THE UNITED STATES DEPARTMENT OF THE AIR FORCE, Defendants.	§	Case No. 6:19-cv-00178 **Amended Complaint**

THE STATE OF NEW MEXICO, by and through New Mexico Attorney General Hector H. Balderas, and the New Mexico Environment Department (collectively, "Plaintiffs" or the "State"), file this Amended Complaint against the above-named Defendants and in support thereof allege as follows:

INTRODUCTION AND STATEMENT OF THE CASE

1. This is a civil action by the State against Defendants United States and the U.S. Department of the Air Force (collectively, "Defendants") brought pursuant to the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 to -14, and the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*

2. This action arises from the improper disposal of and the unlawful failure to contain or address contaminants and hazardous wastes at Cannon Air Force Base ("Cannon"), located approximately seven miles southwest of Clovis, New Mexico and above the Ogallala Aquifer, and Holloman Air Force Base ("Holloman"), located in the Tularosa Basin between the

Sacramento and San Andreas mountain ranges ten miles west of Alamogordo, New Mexico, by Defendants, resulting in contamination and pollution of the environment, including public and private water sources both on- and off-site, with per- and polyfluoroalkyl substances ("PFAS"), also known as fluorochemicals, such as perfluorooctanoic acid ("PFOA") and perfluorooctanesulfonic acid ("PFOS"), and other known or suspected toxic compounds.

3. Defendants' discharges and the resulting contamination at Cannon and Holloman have created an imminent and substantial endangerment to human health and the environment. *See* 42 U.S.C. § 6972(a)(B); NMSA 1978, § 74-4-13.

4. Additionally, the State has suffered a direct injury as a result of the continued presence of PFAS in the resources of the State and the United States' refusal to take timely action to clean up the contamination or mitigate the damages associated with the same. Among these, the State has suffered an injury to the State's sovereign interest in the enforcement of its laws, injury and/or imminent threat of injury to its wildlife, which are owned by the State in its sovereign capacity, and to its agricultural economy, outdoor recreation, and tourism.

5. As a result of this ongoing and persistent contamination and pollution, the State seeks declaratory and injunctive relief, and reimbursement of past and future costs incurred by the State associated with these environmental and public health risks and injuries at Cannon and Holloman.

JURISDICTION AND VENUE

6. This Court has subject matter jurisdiction over this action under 28 U.S.C. § 1331.

7. This Court has the authority to grant declaratory relief, 28 U.S.C. § 2201, as well as further relief requested in this Complaint, including injunctive relief, 28 U.S.C. § 2202.

8. This Court has personal jurisdiction over Defendants as they conduct sufficient business with sufficient minimum contacts in the State, and/or intentionally subjected themselves to this jurisdiction through the commission of tortious activity within the State.

9. Venue is proper in the United States District Court for the District of New Mexico pursuant to 28 U.S.C. § 1391, because the acts described in this Complaint occurred in this judicial district.

PARTIES

Plaintiffs

10. Plaintiff, the New Mexico Environment Department ("NMED") is a state executive agency pursuant to the Department of Environment Act, NMSA 1978, §§ 9-7A-1 to -15. NMED is charged with the administration and enforcement of the New Mexico Hazardous Waste Act ("HWA") and the Hazardous Waste Management Regulations, 20.4.1-20.4.1.1105 NMAC, and has authority to bring this lawsuit. NMSA 1978, § 74-1-6(A); § 74-4-13(A).

11. New Mexico Attorney General Hector Balderas, is the "attorney for the State of New Mexico," *State ex rel. Norvell v. Credit Bureau of Albuquerque, Inc.*, 1973-NMSC-087, ¶ 5, 85 N.M. 521, 514 P.2d 40, and his office is recognized in Article V, Section 1 of the New Mexico Constitution. The New Mexico Legislature has authorized the Attorney General to prosecute and defend, in any court, civil actions in which the State is a party, when, in his judgment, the interest of the State requires such an action. NMSA 1978, § 8-5-2; *State ex rel. Att'y Gen. v. Reese*, 1967-NMSC-172, ¶ 14, 78 N.M. 241, 430 P.2d 399.

12. Plaintiffs bring these claims, in part, pursuant to their authority to guard against adverse environmental and health impacts and risks associated with contamination such as that which is present at Cannon and Holloman.

13. Plaintiff also brings this suit under the citizen suit enforcement provision of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6972. The State provided notice to the United States prior to the commencement of this action in accordance with RCRA, 42 U.S.C. § 6928(a)(2). As a signatory to this Complaint, NMED has notice of the commencement of this action as required by that Section.

14. New Mexico has been delegated the primary responsibility to implement and enforce RCRA within the state, and New Mexico's HWA and regulations promulgated pursuant to it are incorporated by reference into RCRA. 40 C.F.R. § 272.1601.

15. New Mexico also brings this suit to redress direct injuries to the State.

16. In New Mexico, as in other states, '"[t]he wild animals within its borders are, so far as capable of ownership, owned by the state in its sovereign capacity for the common benefit of all of its people.'" *State ex rel. Sofeico v. Heffernan*, 1936-NMSC-069, ¶ 27, 41 N.M. 219, 67 P.2d 240 (quoting *Lacoste v. Dep't of Conservation*, 263 U.S. 545, 549 (1924)).

17. Finally, under Article XX, Section 21 of the New Mexico Constitution, "protection of the state's beautiful and healthful environment is . . . declared to be of fundamental importance to the public interest, health, safety and the general welfare." This provision "recognizes that a public trust duty exists for the protection of New Mexico's natural resources . . . for the benefit of the people of this state." *Sanders-Reed ex rel. Sanders-Reed v. Martinez*, 2015-NMCA-063, ¶ 15, 350 P.3d 1221.[1]

Defendants

18. Defendant is the United States of America, including all federal government agencies and departments responsible for the acts alleged in this Complaint.

[1] New Mexico reserves the right to pursue damages for injuries to its natural resources pursuant to the New Mexico Natural Resources Trustee Act, NMSA 1978, § 75-7-1 to -5, the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9607(a)(4)(c), and the common law.

19. The Department of the Air Force is one of three military departments of the U.S. Department of Defense and is responsible for the administration and operation of the United States Air Force. The Department of the Air Force is and was at all times relevant to this Complaint the owner and operator of Cannon and Holloman.

GENERAL FACTUAL ALLEGATIONS

A. PFAS Background

20. PFAS comprise a family of approximately 3,500 manmade chemicals not found in nature. The backbone of a PFAS chemical is a chain of carbon atoms, which may be fully (per) or partly (poly) fluorinated. *See, e.g.*, U.S. EPA, *Technical Fact Sheet—Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)* (Nov. 2017), at 2, *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ffrrofactsheet_contaminants_pfos_pfoa_11-20-17_508_0.pdf (hereinafter "*EPA Fact Sheet*").

21. The two most recognized members of the PFAS family are PFOS and PFOA, which are long, eight-chain PFAS. *EPA Fact Sheet*, at 1. PFOS and PFOA easily dissolve in water and thus they are mobile and readily spread in the environment. *Id.* They are also persistent, and as a result have been widely dubbed "forever chemicals." *Id.* PFOS and PFOA have degradation periods of years, decades, or longer under natural conditions and have a half-life in the human body of two to nine years. ATDSR, *An Overview of Perfluoroalkyl and Polyfluoroalkyl Substances and Interim Guidance for Clinicians Responding to Patient Exposure Concerns*, at 2 (June 7, 2017), *available at* https://www.atsdr.cdc.gov/pfc/docs/pfas_clinician_fact_sheet_508.pdf.

22. PFOA and PFOS also readily contaminate soils and leach from soil into groundwater, where they can travel significant distances. *EPA Fact Sheet*, at 1.

23. PFOS and PFOA are strong, stable, bioaccumulative, and biomagnifying, meaning that they resist degradation due to light, water, and biological processes and tend to accumulate in organisms up the food chain. *Id.*

24. Further, PFOS and PFOA are toxic, meaning that they pose significant threats to public health and the environment. *Id.* Exposure to PFOS and PFOA presents health risks even when PFOS and PFOA are ingested at seemingly low levels.[2]

25. PFOS and PFOA exposure is associated with increased risk of a variety of illnesses including testicular cancer, kidney cancer, thyroid disorders, high cholesterol, ulcerative colitis, and pregnancy-induced hypertension. The chemicals are particularly dangerous for pregnant woman and young children. *EPA Fact Sheet*, at 3; EPA Drinking Water Advisory for PFOA, at 39-42.

26. Toxicology studies show that PFOS and PFOA are readily absorbed after oral exposure and are relatively stable once ingested so that they accumulate over time in individual organs, primarily the blood serum, kidney, and liver. *EPA Fact Sheet*, at 3.

27. Studies further found that individuals with occupational exposure to PFOA run higher risks of bladder and kidney cancer. EPA Drinking Water Advisory for PFOA, at 39-42.

28. In studies involving laboratory animals, PFOA and PFOS exposure increased the risk of tumors, changed hormone levels, and affected the function of the liver, thyroid, pancreas,

[2] *See* EPA, Drinking Water Advisory for Perflurooctanoic Acid (PFOA) (May 2016), *available at* https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final_508.pdf (hereinafter "EPA Drinking Water Advisory for PFOA"); EPA, Drinking Water Advisory for Perflurooctane Sulfonate (PFOS) (May 2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf (hereinafter "EPA Drinking Water Advisory for PFOS").

and the immune system. *See* EPA Drinking Water Advisory for PFOA, at 35-39, 44-45; EPA Drinking Water Advisory for PFOS, at 36-37, 42.

29. The adverse effects associated with both PFOS and PFOA are additive when both chemicals are present, meaning that their individual adverse effects are cumulative. *See* U.S. Dep't of Health and Human Services and Centers for Disease Control and Prevention, *Fourth National Report on Human Exposure to Environmental Chemicals*, Updated Tables (March 2018), *available at* https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Mar2018.pdf.

30. However, injuries are not sudden and can arise months or years after exposure to PFOS and/or PFOA.

31. PFAS chemicals are often found together in the environment, and some PFAS chemicals degrade to other PFAS chemicals. EPA, Long-chain Perfluorinated Chemicals (PFCs) Action Plan (Dec. 30, 2009), https://www.epa.gov/sites/production/files/2016-01/documents/pfcs_action_plan1230_09.pdf.

32. Ecological receptors may also suffer from developmental, reproductive, and systemic effects when exposed to PFOA or PFOS. *EPA Fact Sheet*, at 1.

33. PFAS were formally identified as "emerging contaminants" by the U.S. Environmental Protection Agency ("EPA") in 2014. EPA, *Emerging Contaminants Fact Sheet – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)* (March 2014), *available at* https://nepis.epa.gov/Exe/ZyPDF.cgi/P100LTG6.PDF?Dockey=P100LTG6.PDF (hereinafter "*EPA Emerging Contaminants Fact Sheet*"). This term describes contaminants about which the scientific community, regulatory agencies, and the public have an evolving awareness regarding their movements in the environment and effects on public health. *Id.* PFAS, like other emerging

contaminants, are the focus of active research and study, which means new information is released periodically regarding the effects on the environment and human health as a result of exposure to the chemicals. *Id.*

34. Six PFAS were included by the EPA in the Third Unregulated Contaminant Monitoring Rule per the 1996 Safe Drinking Water Act Amendments in May 2012. *See* EPA Unregulated Contaminant Monitoring Rule UCMR 3 (2012 – 2016), 77 FR 26072, 2012. Monitoring of these substances was required between 2013 and 2015 to provide a basis for future regulatory action to protect public health. *Id.*

35. In January 2009, EPA established a drinking water Provisional Health Advisory ("HA") level for PFOA and PFOS—two of the PFC compounds about which we have the most toxicological data. EPA set the HA level at 0.4 parts per billion ("ppb") for PFOA and 0.2 ppb for PFOS. *EPA Emerging Contaminants Fact Sheet*, at 5.

36. In 2016, following additional study, the EPA lowered the HA for PFOS and PFOA. EPA established the HA levels for PFOS and PFOA at 70 parts per trillion ("ppt"), equivalent to 0.07 parts per billion or 0.07 micrograms per liter ("µg/L"). *EPA Fact Sheet*, at 4. In addition, EPA, in issuing its 2016 HAs, directs that when both PFOA and PFOS are found in drinking water, the *combined* concentrations of PFOA and PFOS should be compared with the 70 ppt HA. *Id.*

37. In 2018, the Agency for Toxic Substances and Disease Registry ("ATSDR") released an updated Toxicological Profile for PFAS that revised its minimal risk levels ("MRLs") for PFOA and PFOS. An MRL is the estimated amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health. The intermediate oral (15 to 364 days) MRL for PFOA was revised from the previous level of $2x10^{-5}$ (0.00002) mg/kg/day to

$3x10^{-6}$ (0.000003) mg/kg/day and for PFOS was revised from the previous level of $3x10^{-5}$ (0.00003) mg/kg/day to $2x10^{-6}$ (0.000002) mg/kg/day. These new MRLs were lowered because they now take into consideration immune system effects; the former thresholds were based only developmental health effects. *See* ATDSR, Toxicological Profile for Perfluoroalkyls (June 2018), https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf (hereinafter "ATSDR Toxicological Profile").

38. At least four states, including Vermont, California, Minnesota, and New Jersey, as well as Canada, have adopted limits or health guidelines on PFAS that are lower than the current EPA HAs.[3]

39. In July 2018, the New Mexico Water Quality Control Commission added perfluorinated compounds that include PFOA and PFOS to the list of toxic pollutants the State regulates at a risk-based level "shown by credible scientific data." 20.6.2.3103(A)(2) NMAC; 20.6.2.7(T)(2)(s) NMAC.

40. NMED's Hazardous Waste Bureau, with the Ground Water Quality Bureau, developed the NMED Risk Assessment Guidance for Site Investigation and Remediation, which helps to determine if a site is contaminated to a point that warrants further investigation or

[3] *See* State of Vermont Agency of Natural Resources, Health Department Updates Health Advisory For PFAS, State Expands Testing Plan to Include 10 Schools in Pilot Project, July 10, 2018, ANR.VERMONT.GOV, https://anr.vermont.gov/node/1223; California Water Boards, *Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS)*, CA.GOV, https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/PFOA_PFOS.html (last accessed June 12, 2019); Minnesota Department of Health, *Perfluoroalkyl Substances (PFAS) and Health*, at 3, HEALTH.STATE.MN.US, https://www.health.state.mn.us/communities/environment/hazardous/docs/pfashealth.pdf (last accessed June 12, 2019); New Jersey Department of Environmental Protection, *Contaminants of Emerging Concern, PFAS Standards, Criteria, and Guidance*, NJ.GOV, https://www.nj.gov/dep/srp/emerging-contaminants/ (last accessed June 12, 2019); Health Canada, *Guidelines for Canadian Drinking Water Quality: Guideline Technical Document—Perfluorooctane Sulfonate (PFOS)*, CANADA.CA, https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-perfluorooctane-sulfonate/document.html (last accessed June 12, 2019);Health Canada, *Guidelines for Canadian Drinking Water Quality: Guideline Technical Document—Perfluorooctanoic Acid (PFOA)*, CANADA.CA, https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-technical-document-perfluorooctanoic-acid.html (last accessed June 12, 2019).

action. The associated screening levels and soil screening levels were developed based on the standards found in 20.6.2.3103. The Hazardous Waste Bureau uses those screening levels in its administration of the HWA and the Hazardous Waste Management Regulations.

41. Additional PFAS for which there are currently less scientific information include: Perfluorohexane sulfonic acid ("PFHxS"); Perfluorooctane sulfonamide ("PFOSA"); Perfluorononanoate acid ("PFNA"); Perfluorododecanoic acid ("PFDoA"); and Perfluorobutanesulfonic acid ("PFBS"). *See* ATSDR Toxicological Profile, at 1.

42. While more studies have been conducted and thus more is known regarding PFOS and PFOA, all PFAS have generally demonstrated similar characteristics to PFOS and PFOA.

43. By 2015, PFOA was voluntarily phased out of production by the major manufacturers. *EPA Fact Sheet*, at 2. However early studies of the replacement PFAS indicate they are nearly as harmful. *See* A. Blum et al., *The Madrid Statement on Poly-and Perfluoroalkyl Substances (PFASs)*, ENVIRON. HEALTH PERSPECT. 123:A107–A111 (2015).

B. PFAS in AFFF Used at Bases

44. In the 1960s, 3M Company and the U.S. Navy developed "aqueous film-forming foam" ("AFFF"), a firefighting foam containing PFOS and PFOA. AFFF concentrate contains fluorochemicals used to meet required performance standards for fire extinguishing agents.

45. The United States Air Force began purchasing and using AFFF-containing PFAS for firefighting training activities and petroleum fire extinguishment in 1970.

46. AFFF was primarily used on Air Force installations at fire training areas, but may have also been used, stored, or released from hangar fire suppression systems, at firefighting equipment testing and maintenance areas, and during emergency response actions for fuel spills and mishaps.

47. A 1980s study by the U.S. Navy found that AFFF has "adverse effects environmentally" and kills aquatic life. Edward S. K. Chian, et al., *Membrane Treatment of Aqueous Film Forming Foam (AFFF) Wastes for Recovery of its Active Ingredients* (Oct. 1980), at 1, *available at* https://apps.dtic.mil/dtic/tr/fulltext/u2/a136612.pdf.

48. As early as 2011, the U.S. Department of Defense acknowledged that there was a PFAS crisis among its facilities. *See* Dep't of Defense, Alternatives to Aqueous Film Forming Foam Report to Congress (June 2018), at 1, *available at* https://www.denix.osd.mil/derp/home/documents/alternatives-to-aqueous-film-forming-foam-report-to-congress/. An internal study identified 594 military sites that were likely to have contaminated groundwater, although it was noted that this number may underestimate the problem by not including AFFF spills, pipeline leaks, or aircraft hangar fire suppression systems. *EPA Emerging Contaminants Fact Sheet*, at 4.

49. In March 2018, the military acknowledged that PFAS were present at 121 military sites and suspected at hundreds of others. At least 524 drinking water supplies in communities near military sites have PFAS levels that exceed EPA's HA. Maureen Sullivan, Deputy Assistant Secretary of Defense, *Addressing Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)*, at 8 (March 2018), *available at* https://partner-mco-archive.s3.amazonaws.com/client_files/1524589484.pdf.

50. The USAF is working to replace its current inventory of AFFF with more formulations based on shorter carbon chains, such as Phos-Chek, a six-carbon chain ("C6") based foam. Dep't of Defense, Alternatives to Aqueous Film Forming Foam Report to Congress (June 2018), at 4.

51. C6 PFAS are the most prominent replacements for traditional eight-carbon chain PFAS as they are thought to degrade faster. DuPont, one of the major consumers and producers of PFOA, has a spinoff company, Chemours, that manufactures the most well-known C6 product known as GenX.

52. C6 products are still PFAS and present similar health and environmental concerns to longer-chain PFAS. In May 2015, 200 scientists signed the Madrid Statement, "which expresses concern about the production of all fluorochemicals, or PFAS, including those that have replaced PFOA. PFOA and its replacements are suspected to belong to a large class of artificial compounds called endocrine-disrupting chemicals; these compounds, which include chemicals used in the production of pesticides, plastics, and gasoline, interfere with human reproduction and metabolism and cause cancer, thyroid problems and nervous system disorders." A. Blum et al., *The Madrid Statement on Poly-and Perfluoroalkyl Substances (PFASs)*, ENVIRON. HEALTH PERSPECT. 123:A107–A111 (2015).

53. To the extent the Air Force intends to utilize these alternatives, their use must similarly be compliant with applicable statutes and common laws that are protective of human health and the environment.

C. PFAS Contamination at New Mexico Air Force Bases

Cannon Air Force Base

54. Cannon is located in eastern New Mexico, near the city of Clovis. Cannon encompasses approximately 3,789 acres of land owned by the United States and hosts a population of roughly 7,800 people.

55. Cannon is located above the Ogallala Aquifer.

56. Clovis, New Mexico is a city with a population of approximately 39,000 that relies upon the Ogallala Aquifer for its potable water.

57. Cannon includes two perpendicular active runways in the central and southwest portions; maintenance, support, and operational facilities west of the central runway/flightline; supplemental hangars and apron areas in the south-central region; a wastewater treatment plant to the east; and a golf course and residential and service facilities in the northwest portion.

58. Adjacent land to Cannon includes mixed-use land utilized as residential, agricultural, and farmland to the north; agricultural and farmland to the east and south; and agricultural and open grassland to the west. Cannon is an active military installation that currently houses the 27th Special Operation Wing, which conducts sensitive special missions including close air support, unmanned aerial vehicle operations, and non-standard aviation.

59. Cannon was developed in 1929 when Portair Field was established as a civilian passenger terminal. The Army Air Corps acquired control of the facility in 1942, and it became known as the Clovis Army Air Base. Clovis Army Air Base operated as an installation for aviation, bombing, and gunnery training until 1947 when the facility was deactivated. The Base was reactivated as Clovis Air Force Base in 1951 and became a permanent military installation in June 1957, when it was renamed Cannon Air Force Base. Defendants have used AFFF at Cannon for more than fifty years in training and actual firefighting events at the base. During routine training exercises, AFFF was sprayed directly on the ground and/or tarmac at several fire training areas, allowing PFOA and PFOS to travel to the surrounding groundwater, causing contamination on and offsite. PFAS remains at very high concentrations in groundwater both on and off the base.

60. In addition to routine training for personnel, additional releases of PFAS-containing AFFF have occurred at Cannon through testing of the equipment, false alarms, equipment malfunctions, and other incidental releases in the hangars, fire stations, and other locations. Once the AFFF-containing PFAS was released into the environment, the contamination migrated off-site.

61. On July 26, 2017, Defendants provided NMED with a "*Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide Installation-Specific Work Plan"* for Cannon ("Cannon SI Work Plan"). The provision of this report to NMED was described "as a courtesy" in a July 27, 2017 letter to NMED, despite Defendants' obligation to provide this information to the State.

62. The purpose of the Cannon SI Work Plan was to identify locations where PFAS may have been used and released into the environment and to provide an initial assessment of possible migration pathways and receptors of potential contamination.

63. Twenty-one potential AFFF release areas were identified during the preliminary assessment. The Air Force recommended fifteen of those AFFF release for site investigation, although it did not preclude the presence of PFAS contamination at other areas throughout the site. *See* Cannon SI Work Plan, at 3-6. As stated in the Cannon SI Work Plan, the following areas are known to have confirmed releases of AFFF:

a. **Former Fire Training Area ("FTA") No. 2**—Former FTA No. 2 is located in the southeast corner of Cannon, approximately 1,000 feet south of the active FTA, and was used for fire training exercises from approximately 1968 to 1974. The area includes two round depressions in the land surface, each measuring approximately 100 feet in diameter. Fire training exercises were conducted twice per quarter using approximately 300 gallons of the unused jet propellant JP-4. No specific AFFF use was reported at Former FTA No. 2; however, since the FTA operated after initial use of AFFF at the base, it is likely that AFFF was used at this location.

b. **Former FTA No. 3**—Former FTA No. 3 is located in the southeast corner of the base, approximately 800 feet southeast of the active FTA, and was used concurrently with FTA No. 2 between approximately 1968 and 1972. Training exercises were conducted twice per quarter in an unlined, half-moon shaped area approximately 100 feet in length. No specific use of AFFF at Former FTA No. 2 was recorded; however, since the FTA operated after initial use of AFFF at the base, it is likely that AFFF was used at this location.

c. **Former FTA No. 4**—Former FTA No. 4 was used form 1974 through 1995 for fire training exercises. Training activities were conducted twice per quarter, during which an unknown volume of AFFF was used. FTA No. 4 consisted of an unlined circular area approximately 400 feet in diameter with a mock aircraft located in the center. Prior to 1985, the jet propellant JP-4 and AFFF runoff generated during fire training exercises collected in an unlined pit. The pit was backfilled in 1985 and a new, lined pit with an oil/water separator was installed to handle collected runoff. The oil/water separator was subsequently removed in 1996.

d. **Hangar 119**—General storage warehouse hangar located in the west central portion of the base, west of the flight apron, with three accidental AFFF releases. The first incident occurred in September 2006 when approximately 60 gallons of AFFF discharged into a storm drain after the AFFF system was accidentally activated, possibly due to a corroded valve. The second incident occurred in September 2012 when a "significant amount" of AFFF was discharged into bay number one and flowed onto asphalt on the north side of the structure between Hangar 119 and Building 102. Incident reports indicate that a "huge amount" of AFFF entered a storm drain while the rest was left to evaporate. The third incident occurred in July 2013 when an unknown quantity of AFFF was discharged onto the concrete flight ramp outside of the bays, which convey liquid directly to the South Playa Lake. Due to the large quantity of AFFF released at Hangar 119, AFFF potentially migrated to grassy areas to the south and southwest of the structure.

e. **Hangar 133**—Small aircraft hangar located in the west central portion of the base, immediately south of Hangar 119, with two additional AFFF releases. Several hundred gallons of AFFF were released during a scheduled rinsing of the hangar fire system in December 2000 and entered a nearby storm drain. Approximately 200 gallons of AFFF were released into a hangar bay following a power outage in July 2001. Most of the AFFF entered a floor trench and was routed to the wastewater treatment plan ("WWTP"); however, AFFF that did not enter the floor trench was washed into nearby infield soil and allowed to evaporate.

f. **Former Sewage Lagoon**—The former sewage lagoons consisted of two unlined surface impoundments that were used from 1966 to 1998 and received sanitary and industrial waste from base facilities prior to the construction of the WWTP. The former sewage lagoons would have received any AFFF that entered the sanitary sewer system from 1966 to 1998. Documented releases of AFFF to the sanitary system from Hangars 199 and 208 were reported prior to and during 1998. As such, there is evidence that AFFF was released to the environment at the former sewage lagoons.

g. **North Playa Lake Outfall**—North Playa Lake, located southeast of the WWTP, received all Cannon sanitary and industrial wastewater from 1943 to 1966. Currently, all treated effluent from the WWTPP is released primarily to North Playa Lake with a portion also released to the golf course for irrigation. Since there is no accepted wastewater treatment process for PFAS, any wastewater collected at the WWTP containing PFAS would be passed on to North Playa Lake.

h. **South Playa Lake Outfall**—South Playa Lake is located in the southwestern portion of Cannon and serves as the base's primary stormwater collection point. The lake has received stormwater runoff from portions of the flightline area since 1943. Solvents, fuels, oils, greases, and AFFF are all potential contaminants that would have discharged to the lake from the flightline area. Documented releases of AFFF in the hangars resulted in AFFF entering storm drains with liquid being subsequently routed to South Playa Lake.

i. **Hangar 109**—Parking and general maintenance hangar located in the west central portion of Cannon, with two accidental AFFF releases. The first release occurred in December 1999 when an office fire activated the AFFF fire suppression system, releasing approximately 500 gallons of AFFF in the hangar bay that reportedly entered the floor trench and was routed to the WWTP. No AFFF was reportedly released outside the hangar in 1999. A second release of approximately twenty-five gallons of AFFF solution occurred in 2016. Installation personnel reported that AFFF was released outside the hangar and was allowed to evaporate west and southwest of the hangar.

j. **Active FTA**—Active FTA located in the southeast portion of Cannon, immediately northwest of FT-07, FT-08, and FTA-4. The FTA became operational in 1997 and consists of a circular lined burn pit with a mockup of a large aircraft, a propane fuel tank, a control panel, and a lined evaporation pond. Fire training exercises are conducted at the active FTA approximately monthly using water or AFFF. The fire department also conducts annual vehicle foam checks at the FTA. Liquids discharged into the lined burn pit, including water and AFFF, drain to the lined evaporation pond located approximately 300 feet southwest of the pit and are left to evaporate. The liner of the evaporation pit has required repairs in the past, and breaches in the liner have allowed AFFF to infiltrate the soils beneath the liner. Additionally storms in May 2015 resulted in significant flash flooding across Cannon, which likely resulted in any residual AFFF located in the evaporation basin to overflow and be released in the surrounding environment.

k. **Landfill #4**—Closed landfill covering approximately 7 acres in the east central portion of Cannon that was only operational for one year between 1967 and 1968. The landfill received domestic and industrial wastes including solvents, paints, thinners, and waste oils. Disposal activities consisted of placing waste material into a trench, burning the accumulated waste, and then covering the burned material with soil. Due to the period of operation, AFFF would not have been included in landfilled refuse; however, the landfill cover was revegetated and used water from North Playa Lake, located immediately south of Landfill #4, which receives treated effluents from the WWTP.

l. **Perimeter Road Fuel Spill**—A fuel tanker truck overturned while traveling along Perimeter Road in the southeast corner of the base. All fuel from the tanker was released on the southeast side of the road. The fire department responded with crash trucks and reportedly sprayed AFFF on the fuel spill. The response was conducted over several days with multiple fire trucks discharging the entire supply of AFFF on the release. Contaminated soils were excavated, but the excavation depth is unknown.

m. **Flightline Crash Areas**—Three aircraft crashes have occurred along the flightline where the fire department responded with the use of AFFF. Two incidents involving F-16 aircraft were identified at the southern end of the flightline, and a third incident involving an F-111 aircraft occurred at the north end of the flightline. No information regarding the amount of AFFF released is known at this time.

n. **Whispering Winds Golf Course Outfall**—The base golf course began receiving a portion of treated effluent from the WWTP to fill ponds and irrigate the greens in approximately 2002. The golf course is irrigated five nights per week for approximately four hours using a sprinkler system. Any wastewater collected at the WWTP containing AFFF therefore could be released at the golf course.

o. **Hangar 204**—Hangar 204 was identified as an area for additional investigation due to the release of AFFF outside the structure; however, it was determined during a scoping visit that based on surface topography surrounding the hangar, any AFFF released from hangar doors would drain directly to storm drains in the apron or would evaporate on the concrete apron. Any AFFF that entered the storm drain would have been routed to South Playa Lake. Infiltration of AFFF into soils in the vicinity of Hangar 204 was thus thought to be unlikely and, therefore, it was removed from further investigation.

64. In August 2018, Cannon submitted a "*Final Site Investigation Report, Investigation of Aqueous Film Forming Foam Cannon Air Force Base, New Mexico*" to NMED ("Cannon SI Report"). As stated in the Cannon SI Report, exceedances of the EPA's HA of 70 ppt for groundwater were detected in six of the eighteen environmental restoration program monitoring wells at the base.

65. Fourteen AFFF release areas at Cannon were analyzed for PFAS contamination in the soil and groundwater. PFOS and PFOA concentrations in soil and sediment were compared

against the regional screening level ("RSL") of 0.126 mg/kg.[4] Groundwater concentrations for PFOA and PFOS, or PFOA and PFOS combined, were compared against the EPA's HA of 70 ppt.

66. At Former FTA No. 3, PFOS was detected above the RSL in the surface sample at 0.24 mg/kg, nearly twice the RSL.

67. At Former FTA No. 4, PFOS was detected above the RSL in the surface soil samples at each of the three locations with the highest detected concentration being 0.61 mg/kg, nearly five times the RSL.

68. At Hangars 119 and 113, PFOS was detected above the RSL at each location with the highest detected concentration being 0.42 mg/kg, more than three times the RSL.

69. At the Former Sewage Lagoons, PFOS was detected above the RSL at two subsurface sample sites with the highest detected concentration being 0.29 mg/kg, more than twice the RSL.

70. At the North Playa Lake Outfall, PFOS and PFOA combined were detected above the HA values at both surface water sample sites, with the highest detected combined value being 0.123 µg/L, nearly two times the HA.

71. At Hangar 109, PFOS was detected above the RSL at a maximum concentration of 0.23 mg/kg, nearly twice the RSL.

72. At the Active FTA, PFOS was detected above the RSL at a surface soil location at a concentration of 1.1 mg/kg, more than eight times the RSL, the highest of all soil samples on the base.

[4] RSLs are risk-based concentrations derived from standardize equations combining exposure information assumptions with EPA toxicity data. RSLs are considered protective for humans over a lifetime, but do not address non-human health endpoints, such as ecological impacts.

73. Two locations, Landfill #4 and Flightline Aircraft Crashes, were presented in the Basewide Groundwater Sampling. PFOS was detected above the HA at five sample sites with a maximum detected concentration of 24 µg/L, 342 times the HA. PFOA was detected above the HA at four sample sites with a maximum detected concentration of 3.1 µg/L, forty-four times the HA. PFOS and PFOA combined exceeded the HA at six sample sites with the maximum concentration of 26.2 µg/L, 374 times the HA.

74. Notably, because these compounds are persistent and bioaccumulative, any detectable amount that can be ingested, regardless of whether or not it exceeds the HA or RSLs, will add to the lifetime concentration of PFAS in any given individual and in the food chain.

75. In October 2017, NMED released for public comment a draft renewal of the 2003 permit NMED had issued to the United States, the owner and operator of Cannon, pursuant to its authority under the HWA, in accordance with the New Mexico Hazardous Waste Management Regulations, 20.4 NMAC.

76. NMED learned in late 2018 that following a preliminary assessment in 2015 and a scoping visit in in 2016, the Air Force collected samples at four of its public supply wells in 2016, at fourteen potential PFAS release sites in 2017, and at off-base private water supply wells in 2018. The Air Force test results documented high concentrations of PFAS compounds in both on- and off-base groundwater.

77. PFAS have contaminated the Ogallala Aquifer under Cannon, although the nature and extent of the plume is not yet fully known.

78. PFAS are migrating along the known hydraulic gradient within the Aquifer, and are moving generally in a southeast direction.

79. Sampling has detected PFAS in some off-base wells, which provide drinking water and livestock and irrigation water to local dairies, including the Highland Dairy, half of a mile south and slightly east of Cannon.

80. Highland Dairy, a major agricultural business in Clovis, shut down in 2019 due to PFAS contamination in its cattle, milk, and land. The dairy is located about a mile southeast of Cannon.

81. Air Force sampling showed a maximum of 539 ppt for PFOA in the Highland Dairy well (7.7 times the EPA HA), and Highland Dairy's own sampling showed 2,920 PFOA (nearly 42 times the HA), with a total PFOS/PFOA of 14,320 ppt in an irrigation well (more than 204 times the HA).

82. Highland Dairy owner Art Schaap has reported to the press that his and his wife's exposure to PFAS is anticipated to lead to acute health problems.

83. Three additional dairies operate downgradient of the suspected plume and only slightly farther away.

84. The agricultural area downgradient of the suspected plume supports numerous farms and additional businesses dependent upon the local water supply, including Southwest Cheese and Westway Feed Products.

85. Numerous private wells also operate in the agricultural areas downgradient of the suspected plume at Cannon.

86. The Air Force itself has determined that the "presence [of PFOS and PFOA at Cannon] in drinking water at levels above the EPA [HAs] poses an imminent and substantial danger to public health or welfare," and notified NMED of this determination via letter on January 10, 2019.

87. On September 26, 2018, NMED sent a letter confirming that a teleconference with the Air Force on August 13, 2018, in which the State noted that the detection of PFAS compounds in groundwater exceeding the HA counted as "a notifiable discharge even if the specific date, sources and volumes of the discharge are not yet known." The Air Force provided a formal notice of the discharge event to NMED on August 14, 2018.

88. NMED advised that the Cannon SI Report submitted on August 27, 2018, would count as an Interim Corrective Action report subject to several conditions as well as additional corrective actions.

89. The Air Force responded to NMED's September 26 letter on October 26, 2018, and declined to make the revisions requested by NMED.

90. In December 2018, NMED issued the final renewal of Cannon's 2003 HWA Permit, RCRA Permit EPA #NM752124454 (Dec. 2018) (the "Permit").

91. Pursuant to RCRA, the State, through the NMED, is authorized to administer and enforce the state hazardous waste management program under the HWA in lieu of the federal program. 40 C.F.R. § 272.1601(a); 40 C.F.R. §272.1601(b).

92. Cannon is a large quantity generator of hazardous waste.

93. The Permit contains terms and conditions that the NMED has determined are necessary to protect human health and the environment in accordance with 20.4.1.900 NMAC, incorporating 40 C.F.R. § 270.32 (b)(2).

Holloman Air Force Base

94. Holloman is located in Otero County near the city of Alamogordo within the Tularosa Basin. The base covers approximately 59,800 acres and hosts a population of roughly 21,000.

95. Alamogordo, New Mexico is a city with a population of approximately 31,000 people who rely partially upon groundwater in the Tularosa Basin for potable water.

96. Holloman, formerly known as Alamogordo Army Air Field, was initiated as a wartime temporary facility in 1942. In March 1947, after a brief inactivation at the end of World War II, the installation was transferred to the Air Material Command with the mission of providing facilities and testing of pilotless aircraft, guided missiles, and allied equipment in support of the Air Material Command Research and Development Program. The base was renamed Holloman Air Force Base in 1948.

97. Holloman is currently home of the 49th Wing of the Air Combat Command, 96th Test Group, 54th Fighter Group, and the German Air Force Flying Training Center. Operations at Holloman include missile testing, aircraft and pilot training, operational equipment and systems testing, and aircraft maintenance and storage.

98. In 2015, the "*Final Preliminary Assessment Report for Perfluorinated Compounds at Holloman Air Force Base, Alamogordo, New Mexico*" identified thirty-one potential PFAS release areas at Holloman. The Preliminary Assessment was provided to NMED as part of the EPA's Health Advisory proceedings.

99. In November 2018, Defendants released the "*Final Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide*" for Holloman. ("Holloman SI Report").

100. The Holloman SI Report detailed five AFFF release areas, *see* Holloman SI Report at 13-25, but did not rule out the possibility that releases had occurred elsewhere at the Base:

a. **Former FTA**—Fire training activities were conducted generally at the Former FTA since 1942, although the exact dates of fire training in this area is unknown. Fire training was

conducted in two unlined burn pit areas within the Former FTA. The volume of AFFF used during each training exercise is unknown. Fire training activities continued at this location until 1990 when training exercises were moved to the current FTA.

b. **Sewage Lagoon Area Outfall**—Prior to construction of a WWTP in 1996, wastewater from Holloman was discharged directly into the sewage lagoon area that was comprised of seven unlined lagoons. Approximately 1.2 million gallons of domestic and industrial wastewater were discharged into the sewage lagoon daily.

c. **Apache Mesa Golf Course Outfall**—In 2011, the golf course began receiving a portion of the effluent from the WWTP to fill two golf course ponds and irrigate greens. Releases of AFFF from within the industrial shops and Holloman would be routed through the WWTP and eventually lead to the water holding tank at the Apache Mesa Golf Course.

d. **Lake Holloman Outfalls**—Wastewater from Holloman was discharged directly into the sewage lagoon area and eventually to Lake Holloman prior to construction of the WWTP in 1996.

e. **Evaporation Pond No. 2**—The evaporation basin was installed in 1991 and currently collects all discharges containing AFFF, routed through hangar bay floor drains from hangars located in the western ramp area of the West Hangar Group. The Holloman Fire Department uses this basin for monthly AFFF tests and firehose washouts. AFFF is reportedly sprayed from vehicles into the pond until a consistent flow pattern is established.

101. The Former FTA (FT-31), the Sewage Lagoon Area Outfall, the Apache Mesa Golf Course Outfall, the Lake Holloman Outfalls, and Evaporation Pond No. 2 release areas were analyzed for PFAS contamination in the soil, sediment, surface water, and groundwater. PFOS and PFOA concentrations in soil and sediment were compared against the RSL of 0.126 mg/kg. Groundwater concentrations for PFOA and PFOS, or PFOA and PFOS combined were compared against the EPA HA of 70 ppt.

102. Six surface soil samples, including one duplicate, and six subsurface soil samples, including one duplicate, from a total of five locations, were taken and analyzed for PFAS at the Former FTA (FT-31). The soils were analyzed for PFOA and PFOS, with each being detected at each sample site. PFOS was detected above the RSL more than half the time with the highest

concentration exceeding the 0.126 mg/kg RSL at 1.13 mg/kg, nearly nine times the limit. At the three groundwater sample sites at FT-31, PFOS, PFOA, and PFOA and PFOS combined were detected well above the EPA HA of 0.07 µg/L, with the highest concentrations being 48.4 µg/L (691 times the HA), 254 µg/L (3,628 times the HA), and 302.4 µg/L (4,314 times the HA), respectively.

103. At the Sewage Lagoon Area Outfall, groundwater results at three locations revealed PFOS, PFOA, and PFOS and PFOA combined all exceeding EPA's HA. The surface water sample also revealed PFOS, PFOA, and combined concentrations exceeding the HA.

104. One groundwater, two sediment, two surface water, and two effluent samples were taken at the Apache Mesa Golf Course Outfall. PFOA and PFOS combined were detected above the HA in the groundwater sample with a maximum concentration of 0.1371 µg/L, nearly twice the HA. PFOS, PFOA, and PFOS and PFOA combined exceeded the HA at both of the surface water sample locations, with the highest concentration of 1.317 µg/L. Likewise, PFOS, PFOA, and the two combined exceeded the HA in both of the effluent samples with the highest concentration of 0.995 µg/L, fourteen times the HA.

105. Soil and groundwater were analyzed at Evaporation Pond No. 2. PFOS was detected above the RSL at the surface and subsurface intervals for each of the soil samples with a maximum concentration of 5.71 mg/kg, the highest of all soil samples for Holloman and forty-five times the RSL. PFOA was also detected above the RSL at the surface level for each sample. PFOS, PFOA, and PFOS and PFOA combined were detected above the HA in the groundwater sample with a maximum PFOS and PFOA combined concentration of 1066.6 µg/L, more than 15,000 times the HA and the highest of all groundwater samples at the base.

106. Sediment and surface water samples were taken at Lake Holloman Outfalls. PFOS was detected in sediment above the RSL at 0.519 mg/kg, four times the RSL. The surface water samples each had concentrations of PFOS, PFOA, and PFOS and PFOA combined that exceed the EPA HA, with the maximum concentration of PFOS and PFOA combined at 3.188 µg/L, forty-five times the HA.

107. PFAS were detected at high levels in on-base sewage lagoons at Holloman as well as at monitoring wells on Apache Mesa Golf Course that utilizes the treated wastewater for irrigation.

108. Exceedingly high levels of PFAS were detected in Lake Holloman. Specifically, PFOA was detected at levels as high as 5900 ng/L, more than 84 times the EPA health advisory level of 70 ng/L, and PFOS was detected as high as 1600 ng/L, more than 22 times the EPA health advisory level.

109. Lake Holloman is considered an important habitat for birds, including migrating ducks, shorebirds, and a number of federally-listed endangered species and state-listed species of concern. Lake Holloman also serves as a valuable recreational resource to the community surrounding the base, as it is used for boating, bird watching, and camping.

110. The Lake Holloman Wetlands Complex is recognized as a refuge for wildlife.

111. PFAS are migrating along the known hydraulic gradient within the Aquifer, and are moving generally in a southwest direction.

112. White Sands National Monument is southwest of the suspected plum at Holloman and within the Tularosa Basin.

113. Hydrologically, the Tularosa Basin is an endoheric (closed) basin, as no water flows out of it.

114. Although much of the groundwater within the Basin is too salty for use as drinking water without treatment, pockets of the Aquifer have lower salinity content and are used for municipal, domestic, agricultural and industrial supply.

115. In Alamogordo, the Bureau of Land Management operates The Brackish Groundwater National Desalination Research Facility.

116. Sampling at both Cannon and Holloman is ongoing in an effort to more fully characterize the extent of the groundwater contamination plumes and their migration outside of the site boundaries.

STATUTORY AND REGULATORY BACKGROUND

117. Congress enacted the Resource Conservation and Recovery Act in 1976 in response to "a rising tide of scrap, discarded, and waste materials" that had become a matter of national concern. 42 U.S.C. § 6901(a)(2), (4) (1984). In enacting RCRA, Congress declared it a national policy "that, wherever feasible, the generation of hazardous waste is to be reduced or eliminated as expeditiously as possible. Waste that is nevertheless generated should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment." 42 U.S.C. § 6902(b).

118. Congress recognized, however, that the "collection of and disposal of solid wastes should continue to be primarily the function of the State, regional, and local agencies." 42 U.S.C. § 6901(a)(4). Thus, RCRA allows any state to administer and enforce a hazardous waste program subject to authorization from the EPA. 42 U.S.C. § 6926(b).

119. RCRA includes a clear and unambiguous waiver of sovereign immunity:

> Each [federal entity] . . . engaged in . . . disposal or management of hazardous waste shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural (including any requirement for permits or reporting or

> any provisions for injunctive relief and such sanctions as may be imposed by a court to enforce such relief), respecting control and abatement of solid waste or hazardous waste disposal and management in the same manner, and to the same extent, as any person is subject to such requirements[.] . . . The United States hereby expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement (including, but not limited to, any injunctive relief, administrative order or civil or administrative penalty or fine . . .).

42 U.S.C. § 6961(a).

120. EPA authorized New Mexico's state program pursuant to RCRA in 1985, 40 C.F.R. § 272.1601(a), and delegated to New Mexico "primary responsibility for enforcing its hazardous waste management program." 40 C.F.R. § 272.1601(b). New Mexico's HWA and regulations promulgated pursuant to it are incorporated by reference into RCRA. 40 C.F.R. § 272.1601(c)(1).

121. The purpose of New Mexico's HWA is to "ensure the maintenance of the quality of the state's environment; to confer optimum health, safety, comfort and economic and social well-being on its inhabitants; and to protect the proper utilization of its lands." Section 74-4-2.

122. Pursuant to the HWA, NMED is authorized to issue permits, Section 74-4-4.2(C), and must deny them if an applicant has made a material misrepresentation or has violated any provision of the HWA, among other reasons, Section 74-4-4.2(D).

123. Pursuant to Section 74-4-13, NMED

> may bring suit in the appropriate district court to immediately restrain any person, including any past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed to or is contributing to the past or current handling, storage, treatment, transportation, or disposal of solid waste or hazardous waste or the condition or maintenance of a storage tank that may present an imminent and substantial endangerment to health or the environment.

124. The HWA, Section 74-4-3(K) defines "hazardous waste" as:

> [A]ny solid waste or combination of solid wastes that because of their quantity, concentration or physical, chemical or infections characteristics may:
>
> (1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or
>
> (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. 'Hazardous waste' does not include any of the following, until the board determines that they are subject to Subtitle C of the federal Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.:
>
> (a) drilling fluids, produced waters and other wastes associated with the exploration, development or production of crude oil or natural gas or geothermal energy;
> (b) fly ash waste;
> (c) bottom ash waste;
> (d) slag waste;
> (e) flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels;
> (f) solid waste from the extraction, beneficiation or processing of ores and minerals, including phosphate rock and overburden from the mining of uranium ore; or
> (g) cement kiln dust waste.

125. New Mexico's Legislature has granted wide latitude to its environmental programs in order to ensure protection of its natural resources, including through a robust regulatory program, *see, e.g.,* Hazardous Waste Management Regulations 20.4.1 through 20.4.1.110.5 NMAC, and the explicit authority to compel compliance therewith, Section 74-4-10. New Mexico's Environmental Protection Regulations and the rulemaking procedures thereunder are to be "liberally construed to carry out their purpose." 20.1.1.108 NMAC.

126. Cannon and Holloman are subject to cleanup obligations applicable to PFAS under RCRA permits.

127. The EPA is not engaged in a removal action under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") at either of the Bases, and the Bases are not listed on the National Priorities List. Neither has the EPA incurred costs to initial a Remedial Investigation and Feasibility Study under CERCLA, nor is it diligently proceeding with a remedial action under CERCLA.

128. Defendants' discharges of PFAS also violated mandatory USAF Instructions, including Air Force Instruction 32-1067, February 4, 2015, Civil Engineering: Water and Fuel Systems ("AFI 32-1067"), which provides mandatory instructions on how to handle wastewater and PFAS. AFI 32-1067 became effective on February 4, 2015, and currently remains in effect.

129. AFI 32-1067 provides that "Firefighting foam of all types will not be released to storm water conveyance structures." AFI 32-1067, at . 24.

130. The Air Force Policy Directive also expressly prohibits the unpermitted discharge of "substances to sanitary or storm systems that contain perfluorinated compounds (PFCs) like perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perflourohexane sulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), or perflurobutanesulfonic acid (PFBS). PFC-containing firefighting foams will not be discharged to a POTW or FOTW. Release of firefighting solutions that contain PFCs from fire systems test activation and fire vehicle chemical discharges will be captured, contained, and disposed of to meet applicable regulatory requirements or applicable policy directives." *Id*. at 19.

131. AFI 32-1067 also prohibits the discharge of "substances that contain pentadecafluorooctanoic acid, perfluorooctanoic acid, perfluorocaprylic acidoerfluorooctanoate (PFOA) or perfluorooctanyl sulfate, perfluoronoanoic acid (PFOS)." Further,"[r]elease of

firefighting solutions from fire systems test activation and fire vehicle chemical discharges will be captured, contained and disposed to meet applicable regulatory requirements." *Id.*

132. AFI 32-1067 also requires "[m]ilitary installations located in the United States [to] comply with applicable Federal, state, and local water, natural gas, and liquid fuel regulations," as well as "all environmental laws, acts and regulations" including RCRA.

133. Upon information and belief, from February 4, 2015 into the present, Defendants failed to capture or contain or treat firefighting foam containing PFAS, including PFOA and PFOS, in violation of AFI 32-1067.

134. Further, this directive confirms the Air Force's knowledge of the hazards associated with PFAS prior to 2015.

CAUSES OF ACTION

First Cause of Action:
Violation of the New Mexico Hazardous Waste Act

135. All allegations above are incorporated herein as if specifically set forth at length.

136. Defendants are a "person" under Section 74-4-3(M).

137. PFAS, as described herein, are discarded materials and each is a "solid waste" as defined under the HWA, Section 74-4-3(O), and a "hazardous waste" as defined under Section 74-4-3(K).

138. As a result of the releases of PFAS and other hazardous wastes at Cannon and Holloman as described herein, Defendants have contributed to and will continue to contribute to the past and present handling, storage, treatment, transportation, and/or disposal of solid or hazardous waste which has or may present an imminent and substantial endangerment to health and/or the environment in violation of the HWA, Section 74-4-13.

139. Conditions at Cannon and Holloman, as described herein, have presented or may present an imminent and substantial endangerment to health and/or the environment via continued migration of contamination in groundwater and/or drinking water, as well as recreational waters and those supporting wildlife, at and around the Bases. In addition to natural resources throughout the environment, members of the public and those living in or visiting surrounding areas are or will be directly exposed to contaminants through all pathways of migration.

140. Although Defendants have acknowledged that the presence of PFOA and PFOS presents an imminent and substantial danger at Cannon, Defendants have declined to take remedial action required under the law.

141. By reason of the foregoing acts and omissions of Defendants, the State is entitled to an order for such relief as may be necessary to remedy the results of Defendants' conduct. Such relief includes but is not limited to injunctive relief compelling Defendants to take all steps necessary to achieve permanent and consistent compliance with the HWA.

Second Cause of Action:
Resource Conservation and Recovery Act (Imminent and Substantial Endangerment)

142. All allegations above are incorporated herein as if specifically set forth at length.

143. The contamination at the Cannon and Holloman AFBs as described herein present an imminent and substantial endangerment to health and/or the environment via continued migration of contamination in groundwater and/or drinking water at and around the Bases. In addition to natural resources throughout the environment, members of the public and those living in or visiting surrounding areas are or will be directly exposes to contaminants through all pathways of migration.

144. Defendants are a "person" under 42 U.S.C. § 6972(a).

145. The hazardous substances present at Cannon and Hollomon, including but not limited to PFAS, as described herein, are "solid wastes," as defined in 42 U.S.C. § 6903(27), because they were discarded material resulting from operations at the Bases, and they resulted in contamination in the natural resources at the Bases.

146. The hazardous substances present at Cannon and Hollomon, including but not limited to PFAS, as described herein, "hazardous wastes" as defined in 42 U.S.C. § 6903(5), because, as described above, they "cause, or significantly contribute to an increase in morality or an increase in serious irreversible, or incapacitating reversible, illness" and "pose a substantial present or potential hazard to human health or the environment" because they have been "improperly treated, stored, transported, or disposed of, or otherwise managed."

147. Defendants have jurisdiction over Cannon and Holloman and are engaged in "activity resulting . . . in the disposal or management of solid waste or hazardous waste" at the Bases, and are therefore required to comply with the requirements of RCRA, pursuant to 42 U.S.C. §6961.

148. Defendants are "past or present generator, past or present transporter, or past or present owner or operator of a treatment, storage, or disposal facility, who has contributed or is contributing to the past and present handling, storage, treatment, transportation and/or disposal of solid or hazardous waste," which has resulted in contamination that presents an imminent and substantial endangerment to health and/or the environment in violation of 42 U.S.C. § 6272(a)(1)(B).

149. By reason of the foregoing acts and omissions of Defendant, the State is entitled to an order for such relief as may be necessary to remedy the results of Defendant's conduct.

Such relief includes but is not limited to injunctive relief compelling Defendant to take all steps necessary to achieve permanent and consistent compliance with RCRA.

150. The State is also entitled to recover all costs of litigation including reasonable attorney fees and expert fees, pursuant to 42 U.S.C. § 6972.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff, the State of New Mexico, respectfully requests that the Court enter judgment in its favor and against Defendants by granting relief as follows:

a. An order declaring that Defendants' conduct violated the HWA and RCRA;

b. Immediate injunctive relief requiring the abatement of ongoing violations of the HWA and RCRA, abatement of the conditions creating an imminent and substantial endangerment, and to fund any costs associated with each compliance whether incurred by the State or third parties performing abatement;

c. A permanent injunction directing Defendants to take all steps necessary to achieve permanent and consistent compliance with HWA and RCRA;

d. All available civil penalties under applicable statutes;

e. The payment for past costs incurred by the State and not yet reimbursed by the Defendants in connection with its oversight and efforts to obtain compliance with the HWA and RCRA in this matter;

f. A declaratory judgment providing the State with a mechanism for reimbursement of future costs incurred by the State in connection with its oversight and efforts to monitor compliance with the HWA and RCRA in this matter;

g. A judgment awarding the State costs and reasonable attorneys' fees incurred in prosecuting this action, together with prejudgment interest, to the full extent permitted by law; and

h. A judgment awarding the State such other relief as may be necessary, just, or appropriate under the circumstances.

Dated: July 24, 2019

Respectfully submitted:

HECTOR H. BALDERAS
NEW MEXICO ATTORNEY GENERAL

/s/ P. Cholla Khoury
P. Cholla Khoury
William G. Grantham
Assistant Attorneys General
Anne Minard
Robert Lundin
Special Assistant Attorneys General
ckhoury@nmag.gov
wgrantham@nmmag.gov
aminard@nmag.gov
rlundin@nmag.gov
Post Office Drawer 1508
Santa Fe, NM 87504
(505) 717-3500

NEW MEXICO ENVIRONMENT DEPARTMENT

/s/ Jennifer Hower
Jennifer Hower
General Counsel
Christopher Atencio
Assistant General Counsel
Special Assistant Attorneys General
Jennifer.hower@state.nm.us
Christopher.atencio@statem.nm.us
New Mexico Environment Department
121 Tijeras Ave. NE
Albuquerque, NM 87102
Phone: (505) 222-9554
Fax: (505) 383-2064

Counsel for Plaintiff the State of New Mexico

UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF NEW MEXICO

STATE OF NEW MEXICO, *ex rel.* HECTOR BALDERAS, Attorney General, and the NEW MEXICO ENVIRONMENT DEPARTMENT, Plaintiffs, v. THE UNITED STATES and THE UNITED STATES DEPARTMENT OF THE AIR FORCE, Defendants.	§	Case No. 6:19-cv-00178 **PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION**

Come now Plaintiffs, through counsel, and ask this Court for a preliminary injunction to address per and polyfluoroalkyl substances ("PFAS") contamination at the Cannon Air Force Base near Clovis, New Mexico, and the Holloman Air Force Base near Alamogordo, New Mexico. Defendants oppose this Motion. In order to protect the public health and the environment from further harm resulting from this PFAS contamination, Plaintiffs request that the Court enter an order granting the following preliminary injunctive relief:

- Expedited discovery of existing documents related to the following:
  - The current delineation of contamination conducted by the Air Force, including groundwater, surface water, and potential airborne exposure pathways and bioaccumulation at Cannon and Holloman; and
  - Interim measures to prevent additional human and environmental exposures, including but not limited to the closure of Lake Holloman to the public.

- Performance of the following work to delineate the extent of PFAS contamination at and around Cannon and Holloman:
  - Regular sampling of all water wells located within a four-mile radius of the southeastern corner of Cannon and within a six-mile radius southwest of Holloman (collectively the "Zones");
  - Sampling of offsite river and ephemeral stream habitat within six miles of Holloman to the west;

  - Production of documentation that the Defendants made due diligent and good faith efforts to timely obtain permission from owners of offsite wells in these Zones;
  - Production of all sampling results for PFAS conducted at Cannon and Holloman and any sampling that might have occurred offsite;
  - Analysis and quantification of perfluorobutanoate ("PFAB") in the ongoing testing of soil and water on and near the Bases;
  - Resampling of all on-base water wells for all PFAS constituents; and
  - Sampling/surveys of wildlife, including migratory birds.

- Completion of the following interim measures to protect the public health at Cannon and Holloman:
  - Providing voluntary blood tests for residents who wish to quantify their exposures to known and suspected PFAS used at the Bases; and
  - Providing alternative drinking water sources to all individuals that have affected water supplies, to the extent those impacts can be determined without full delineation of the contaminant plume.

WHEREFORE, for the reasons more fully set forth in Plaintiffs' Brief in Support of Plaintiffs' Motion for Preliminary Injunction, as well as the certifications of Cholla Khoury, Dave Cobrain, and Mark Laska, Ph.D., in support, Plaintiffs respectfully ask this Court to enter an order granting the requested preliminary injunction.

Dated: July 24, 2019

Respectfully submitted:

HECTOR H. BALDERAS
NEW MEXICO ATTORNEY GENERAL

/s/ P. Cholla Khoury
P. Cholla Khoury
William G. Grantham
Assistant Attorneys General
Anne Minard
Robert Lundin
Special Assistant Attorneys General
ckhoury@nmag.gov
wgrantham@nmmag.gov
aminard@nmag.gov
rlundin@nmag.gov
Post Office Drawer 1508
Santa Fe, NM 87504
(505) 717-3500

NEW MEXICO ENVIRONMENT DEPARTMENT

/s/Jennifer Hower
Christopher Atencio
Assistant General Counsel
Jennifer Hower
General Counsel
Christopher.atencio@statem.nm.us
Jennifer.hower@state.nm.us
New Mexico Environment Department
121 Tijeras Ave. NE
Albuquerque, NM 87102
Phone: (505) 222-9554
Fax: (505) 383-2064

Counsel for Plaintiff the State of New Mexico

CERTIFICATE OF SERVICE

I CERTIFY that, on July 24, 2019, I filed the foregoing using CM/ECF which cause the parties of record to be served by electronic means, as more fully reflected on the Notice of Electronic Filing.

/s/ P. Cholla Khoury

UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF NEW MEXICO

STATE OF NEW MEXICO, *ex rel.* HECTOR BALDERAS, Attorney General, and the NEW MEXICO ENVIRONMENT DEPARTMENT, Plaintiffs, v. THE UNITED STATES and THE UNITED STATES DEPARTMENT OF THE AIR FORCE, Defendants.	§	Case No. 6:19-cv-00178 **PLAINTIFFS' BRIEF IN SUPPORT OF MOTION FOR PRELIMINARY INJUNCTION**

INTRODUCTION

The New Mexico Attorney General and the New Mexico Environment Department ("NMED") (collectively "the State") move the Court for a preliminary injunction to require the Defendants to do what is immediately necessary to protect the people and the environment of the State of New Mexico from the potentially devastating effects of exposure to toxic chemicals known to be present at and emanating from Cannon Air Force Base ("Cannon") and Holloman Air Force Base ("Holloman") (collectively "the Bases").

The State brought this civil action against Defendants, the United States and the United States Department of the Air Force (collectively "Defendants"), pursuant to the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 to -14 ("HWA"), and the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901, *et seq.* ("RCRA"), to end the imminent and substantial endangerment to human health and the environment that is present at Cannon and Holloman as a result of the Defendants' improper disposal and failure to contain per and polyfluoroalkyl substances ("PFAS"), hazardous and solid wastes present in "aqueous film-forming foam" ("AFFF") used extensively by the United States Air Force for firefighting training activities and petroleum fire extinguishment at the Bases.[1] To date, the Air Force continues to use these constituents or similarly dangerous replacements in the same way despite the known adverse effects on human health and the environment.

The most studied PFAS compounds, perflurooctanoic acid ("PFOA") and perfluorooctanesulfonic acid ("PFOS"), which are found in AFFF, are toxic and pose significant threats to human health and the environment.[2] Even in small amounts, exposure to these toxic

[1] Additional hazardous and toxic substances have been discharged and are present at Cannon and Holloman; the current application, however, is focused on the PFAS contamination at the Bases.
[2] Certification of M. Laska, ¶ 15.

chemicals increases the risk of various forms of cancer and other severe illnesses as well as ecological damage.[3] PFAS are particularly dangerous because they are highly mobile and persistent in the environment. The presence of more than one PFAS compound has been found to have additive adverse effects on human health and the environment. Additionally, PFAS bioaccumulate, meaning that they continue to increase in volume in humans and some animals faster than they are excreted. The State does not yet know the full measure of present PFAS exposure levels in residents on and near the Bases or in the nearby environment, but does know that the Defendants' pollution constitutes an actionable imminent and substantial endangerment under RCRA and the HWA. Ongoing exposures to these toxic chemicals will pose increasingly significant harms to environmental and public health.

At Cannon, where Defendants used AFFF for firefighting training and fire extinguishment for decades, PFAS are found in groundwater, soil, surface water, and sediment at several locations throughout the base at extremely high levels, some up to 374 times the United States Environmental Protection Agency's ("EPA") Health Advisory ("HA") limit of 70 parts per trillion ("ppt") where PFOS and PFAS levels are combined.[4] PFAS migrated offsite via groundwater and infiltrated water supplies of neighboring properties.[5]

Families and businesses in Clovis have already suffered catastrophic losses as a result of the contamination and risk losing much more as the contamination continues to spread. Highland Dairy, a major agricultural business in Clovis, shut down in 2019 due to PFAS contamination in its cattle, milk, and land. The dairy is located about a mile southeast of Cannon. Air Force sampling showed a maximum of 539 parts per trillion ("ppt") of PFOA in the Highland Dairy well (7.7 times the EPA HA), and Highland Dairy's own sampling showed 2,920

[3] *Id.*
[4] Certification of M. Laska, ¶ 10.
[5] *Id.* ¶14.

ppt of PFOA (nearly 42 times the HA), with a total PFOS/PFOA of 14,320 ppt in an irrigation well (more than 204 times the HA). Highland Dairy owner Art Schaap has reported to the press that his and his wife's exposure to PFAS is anticipated to lead to acute health problems. Three additional dairies operate downgradient of the suspected plume and only slightly farther away. The agricultural area downgradient of the suspected plume supports numerous farms and additional businesses dependent upon the local water supply, including Southwest Cheese and Westway Feed Products. Numerous private wells also operate in the agricultural areas downgradient of the suspected plume at Cannon.

Defendants acknowledged that the PFAS contamination resulted from their use of AFFF, but they have refused to recognize the authority of the State to regulate these contaminants and to take any necessary actions to prevent further damages, placing the lives and livelihoods of the citizens of New Mexico and the environment directly in harm's way. Defendants have even sued the State, challenging its hazardous waste permit requiring delineation and cleanup at Cannon. In addition, despite requests, Defendants have not provided the State with complete information already within their possession regarding the full nature and extent of this problem.

PFAS were similarly detected in soil, surface waters, sediment, and groundwater throughout Holloman at levels even higher than at Cannon, in some instances at more than 4,314 times the EPA HA. PFAS contamination extends to valuable public resources at Holloman, including Lake Holloman. Lake Holloman is considered an important habitat for birds, including migrating ducks, shorebirds, and a number of federally-listed endangered species and state-listed species of concern. Lake Holloman also serves as a valuable recreational resource to the community surrounding the base. However, as with the contamination at Cannon,

Defendants refused to take any additional steps to protect these resources and the public from further exposure to dangerous PFAS they have released into the environment and failed to abate.

Although the State has and will continue to defend its regulatory and permitting authority, the instant action was necessitated by the Defendants' refusal to address the urgent crises presented at the Bases. While PFAS contamination is known to be present on- and offsite at Cannon and Holloman, and thus presents an imminent and substantial endangerment to the public and the environment, the full magnitude of the contamination is not yet known. The public and the environment continue to be exposed to these hazardous wastes. Accordingly, the State requests the following relief under its authority to protect the public and the environment from an imminent and substantial endangerment on an interim basis pending trial in order to delineate the extent of PFAS contamination resulting from Defendants' discharges at Cannon and Holloman and to protect the public and the environment from the adverse impacts associated with exposure from the same:

- Expedited discovery of existing documents related to the following:
  - The current delineation of contamination conducted by the Air Force, including groundwater, surface water, and potential airborne exposure pathways and bioaccumulation at Cannon and Holloman; and
  - Interim measures to prevent additional human and environmental exposures, including but not limited to the closure of Lake Holloman to the public.

- Further work to delineate the extent of PFAS contamination, including:
  - Regular sampling of all water wells located within a four-mile radius of the southeastern corner of Cannon and within a six-mile radius southwest of Holloman (collectively the "Zones");
  - Sampling of offsite river and ephemeral stream habitat within six miles of Holloman to the west;
  - Production of documentation that the Defendants made due diligent and good faith efforts to timely obtain permission from owners of offsite wells in these Zones;
  - Production of all sampling results for PFAS conducted at Cannon and Holloman and any sampling that might have occurred offsite;
  - Analysis and quantification of perfluorobutanoate ("PFAB") in the ongoing testing of soil and water on and near the Bases;

  - Resampling of all on-base water wells for all PFAS constituents; and
  - Sampling/surveys of wildlife, including migratory birds.

- Interim measures to protect the public health, including:
  - Providing voluntary blood tests for residents who wish to quantify their exposures to known and suspected PFAS used at the Bases; and
  - Providing alternative drinking water sources to all individuals that have affected water supplies, to the extent those impacts can be determined without full delineation of the contaminant plume.

A preliminary injunction is an "extraordinary and drastic remedy," but this is an extraordinary case, and the State has satisfied the requirements for this emergency relief. Given the long-term presence and extreme levels of PFAS contamination at and around Cannon and Holloman and the migration of that contamination into areas that threaten public water sources, as well as irreplaceable ecological resources, the State is able to prove that Defendants have created an imminent and substantial endangerment to human health and the environment under both the HWA and RCRA. If the State is not granted the relief that it now seeks, irreparable harm will continue to occur to not only the public health and the environment, but also to local economies and small business owners that depend upon a clean, non-toxic environment for their livelihoods. The threat of this continued injury far outweighs any prejudice that Defendants would face if a preliminary injunction is granted. Granting an immediate injunction to prevent continued and expanded exposure of the public to these chemicals is of great public interest, as it would serve to protect irreplaceable ecological, recreational, and economic resources, as well as the health of the citizens of the State.

The continued presence of PFAS associated with the Bases and their migration off Bases poses an ongoing severe threat to people and the environment. Rather than take responsibility for the harm that they have caused, Defendants have chosen to ignore their obligations and fight the State's right and duty to protect its citizens and environment. In the absence of the injunctive

measures, there is an unacceptable risk of continued exposure and resulting harm at Cannon, Holloman, and the surrounding communities. As such, a preliminary injunction is appropriate and this Court should grant the relief requested herein.

FACTS IN SUPPORT OF PRELIMINARY INJUNCTION

I. PFAS Are a Hazardous Substance Contained in AFFF that Cause Substantial Harm to the Public Health and the Environment.

PFAS are large group of synthetic fluorinated organic compounds.[6] Due to their ability to repel oil and water, manufacturers produced PFAS for a variety of industries and products, including surface treatments for soil/stain/water resistance; surface treatments of textiles, paper, metals, and for specialized applications, such as fire suppression.[7] PFAS are considered by the EPA to be emerging contaminants, meaning that the risk that they pose to human health and the environment are not yet fully understood.[8] However, what is already known about these chemicals provides sufficient reason for immediate action.

PFOS and PFOA are the most widely studied of the PFAS chemicals.[9] PFOS and PFOA are toxic.[10] In humans, PFOS and PFOA exposure is associated with a variety of illnesses, including kidney cancer, thyroid cancer, high cholesterol, ulcerative colitis, testicular cancer in men, and pregnancy-induced hypertension in women, as well as developmental delays in children.[11] PFOS and PFOA are also extremely persistent in the environment and are resistant to

---

[6] *See* U.S. EPA Technical Fact Sheet—PFOS and PFOA (Nov. 2017), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ffrrofactsheet_contaminants_pfos_pfoa_11-20-17_508_0.pdf.

[7] *Id.*

[8] U.S. EPA, *Emerging Contaminants Fact Sheet – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)* (March 2014), https://nepis.epa.gov/Exe/ZyPDF.cgi/P100LTG6.PDF?Dockey=P100LTG6.PDF.

[9] *See* EPA Technical Fact Sheet—PFOS and PFOA (Nov. 2017), *supra* n. 2, at 1.

[10] *Id.*

[11] *See* EPA, Drinking Water Advisory for Perflurooctanoic Acid (PFOA) (May 2016), https://www.epa.gov/sites/production/files/2016-

typical environmental degradation processes.[12] PFOS and PFOA are also known to bioaccumulate and biomagnify in humans and wildlife.[13] The toxicity, mobility and bioaccumulation potential of PFOS and PFOA, as well as other PFAS, result in adverse effects on the environment and human health,[14] and when more than one PFAS compound is present, those adverse effects become more severe.[15]

AFFF is a firefighting foam developed in the 1960s to be used for flammable liquid fire extinguishment.[16] Training with AFFF is a critical part of proper AFFF use. AFFF concentrate contains PFOA and PFOS.[17] AFFF was primarily used on Air Force installations, including Cannon and Holloman, at fire training areas, but was also been used, stored, or released from hangar fire suppression systems, at firefighting equipment testing and maintenance areas, and during emergency response actions for fuel spills and mishaps.

EPA and multiple states developed a variety of health-based advisories for PFOA and PFOS. In 2009, EPA first developed provisional HAs for PFOA and PFOS, and following further research and investigation, in 2016, EPA finalized a lifetime drinking water HA of 70 ppt

---

05/documents/pfoa_health_advisory_final_508.pdf; EPA, Drinking Water Advisory for Perflurooctane Sulfonate (PFOS) (May 2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf; ATDSR, Toxicological Profile for Perfluoroalkyls (June 2018), *available at* https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf.

[12] EPA Technical Fact Sheet—PFOS and PFOA, *supra* n. 2, at 1.

[13] *Id.*

[14] ATDSR, *An Overview of Perfluoroalkyl and Polyfluoroalkyl Substances and Interim Guidance for Clinicians Responding to Patient Exposure Concerns*, at 1 (June 7, 2017), *available at* https://www.atsdr.cdc.gov/pfc/docs/pfas_clinician_fact_sheet_508.pdf.

[15] *See* U.S. Dep't of Health and Human Services and Centers for Disease Control and Prevention, *Fourth National Report on Human Exposure to Environmental Chemicals*, Updated Tables (March 2018), *available at* https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Mar2018.pdf.

[16] U.S. EPA, *Emerging Contaminants Fact Sheet – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)*, *supra* note 4, at 2.

[17] Although manufacturers of AFFF in the United States now use PFAS other than PFOS, early studies of the replacement PFAS, including what are known as C6 products, indicate that they are nearly as harmful.

for the individual or combined concentrations of PFOA and PFOS.[18] These levels are only guidance at this time, and thus far have not caused the Defendants to take active containment or remedial measures. As of July 2018, the New Mexico Water Quality Control Commission added PFOA and PFOS to the list of toxic pollutants the State regulates at a risk-based level of 70 ppt for PFOA and PFOS combined. *See* 20.6.2.3103.A(2) and 20.6.2.7.T(2)(s) NMAC.[19] The HAs may change as new information becomes available. Further, toxicity information is being developed on additional PFAS, which will be considered in setting additional HAs as more information becomes available.

There is a substantial body of evidence suggesting that the EPA's HA should be more stringent and protective of human health. For example, in 2018, the Agency for Toxic Substances and Disease Registry ("ATSDR") released an updated Toxicological Profile for PFAS that revised its minimal risk levels ("MRLs") for PFOA and PFOS.[20] An MRL is the estimated amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health. The MRLs were lowered because, unlike the EPA HA, they now take into consideration immune system effects; the former thresholds and the EPA HA were based only on developmental health effects.[21] At least four states, including Vermont, California, Minnesota, and New Jersey, adopted limits or health guidelines for PFAS lower than the current EPA HAs.

As of July 2018, the New Mexico Water Quality Control Commission added PFOA and PFOS to the list of toxic pollutants the State regulates. *See* 20.6.2.3103.A9(2) and 20.6.2.7.T(2)(s) NMAC. The HAs and other regulatory limits will likely become stricter as new

[18] EPA, Drinking Water Advisory for PFOA, *supra* note 7; EPA, Drinking Water Advisory for PFOS, *supra* note 7.
[19] *See also* Certification of M. Laska, ¶¶ 11-13.
[20] ATDSR, Toxicological Profile for Perfluoroalkyls (June 2018), *supra* note 7.
[21] *Id.*

public health data and exposure information becomes available. Further, toxicity information is being developed on additional PFAS, which will be considered in setting additional limits.

Levels of PFAS detected thus far at both Cannon and Holloman exceed the EPA's advisory limits, as well as the lower limits determined to be more protective by other states, by significant orders of magnitude. As described below, the gross contamination at these sites, which spread off-site and into public water sources and the environment, is of such concern that immediate efforts are needed to investigate the full extent of PFAS contamination and implement interim measures to protect the public and the environment from further adverse impacts. Upon completing such an investigation and implementing interim measures, effective risk-based remedial actions and other removal measures can be implemented.

II. Extensive PFAS Contamination Resulting from Releases of PFAS-Containing AFFF Used for Decades by Defendants at Cannon and Holloman Has Created a Need for Emergency Relief to Protect Public Health and the Environment and to Prevent Further Harm to the State.

Defendants' investigations affirm that they used AFFF at Cannon and Holloman for more than fifty years in training and actual firefighting events at the Bases during which AFFF was sprayed directly on the ground and/or tarmac in several areas.[22] Defendants also confirmed that additional releases of PFAS-containing AFFF occurred at the Bases through testing of equipment, false alarms, equipment malfunctions, and other incidental releases at the hangars, fire stations, and other locations. The release of PFOA and PFOS into the environment through the use of PFAS-based AFFF at Cannon and Holloman caused contamination on and offsite in locations to which the contaminants migrated.

[22] *See* Certification of M. Laska, ¶ 9.

A. PFAS Contamination at Cannon Threatens the Public Health and Economic Resources of the State.

Cannon is located in eastern New Mexico, near the city of Clovis in Curry County. Cannon encompasses approximately 3,789 acres of land owned by Defendants and hosts a population of roughly 7,800 people. Clovis is a city with a population of approximately 39,000 people who rely upon the Ogallala Aquifer for their potable water.

As a result of decades of AFFF use and discharges at Cannon, PFAS are now present at very high concentrations both on and off of the Cannon site.[23] In 2015, the Air Force completed an initial site inspection at Cannon to assess potential impacts to soil, sediment, surface water, and groundwater at Cannon from PFAS. The resulting August 2018 *Final Site Inspection Report, Investigation of Aqueous Film Forming Foam Cannon Air Force Base, New Mexico* (Cannon Site Inspection Report) indicates that PFAS were detected in soil, surface water, sediment, and groundwater at various sampled locations throughout the site at levels above the EPA's HA, sometimes at levels up to 374 times the HA.[24] As such, the Site Investigation Report demonstrates substantial exceedances of even the least protective guidance regarding PFAS.[25]

Air Force sampling also detected PFAS in off-base wells, which provide drinking water and livestock and irrigation water to local dairies. The Highland Dairy is one of those dairies, located half of a mile south and slightly east of Cannon. Air Force sampling showed a maximum of 539 ppt for PFOA in a Highland Dairy well, and the dairy's own sampling detected a combined level of PFOS/PFOA of 14,320 ppt at an irrigation well, nearly 204 times the EPA's

---

[23] *See* Certification of D. Cobrain, ¶ 11; Certification of M. Laska, ¶¶ 18-26.

[24] *Final Site Investigation Report, Investigation of Aqueous Film Forming Foam Cannon Air Force Base, New Mexico* (Nov. 2018), attached as **Exhibit A**; *see also* Cannon Air Force Base-Maximum Observed PFAS Concentrations and Exceedance Summary, attached as **Exhibit B.** Exhibits referenced herein are those attached to the Certification of C. Khoury filed in connection with this Motion.

[25] *See* Certification of D. Cobrain, ¶ 14; Certification of M. Laska, ¶¶ 18-26, 33-37.

HA. A number of other dairies neighbor Cannon, as do residential communities and other important ecological resources, which are faced with an imminent risk of harm due to Defendants' PFAS releases and failure to control the spread of the same.[26]

B. PFAS Contamination at Holloman Threatens Ecological and Recreational Resources of the State.

Holloman is located in Otero County near the city of Alamogordo, New Mexico. The base covers approximately 59,800 acres and hosts a population of roughly 21,000. Alamogordo is a city with a population of approximately 31,000 people who rely partially upon groundwater in the Tularosa Basin for their potable water.

In 2015, the "*Final Preliminary Assessment Report for Perfluorinated Compounds at Holloman Air Force Base, Alamogordo, New Mexico,*" prepared by Defendants, identified thirty-one potential PFAS release areas at Holloman. In November 2018, Defendants issued the "*Final Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide,*" which selectively focused its investigation on five of these release areas, but did not rule out PFAS contamination at other areas of the site.[27] The 2018 Holloman Site Inspection Report confirmed PFOS and PFOA contamination in soil, sediment, and groundwater at Holloman at levels as high as 4,314 times the EPA's HA.[28]

The results of recent sampling from Lake Holloman taken by the New Mexico Department of Health with the assistance of NMED confirm extremely high levels of PFAS throughout the lake.[29] Specifically, PFOA was detected at levels as high as 5,900,000 ppt, more

---

[26] Certification of M. Laska, ¶¶ 29-32.
[27] *Holloman Final Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide* (Nov. 2018), attached as **Exhibit C.**
[28] Holloman Air Force Base- Maximum Observed PFAS Concentrations and Exceedance Summary, attached as **Exhibit D**; *see also* Certification of D. Cobrain, ¶ 25.
[29] *See* Detection Summary for Lake Holloman Sampling, attached as **Exhibit E**; *see also* Certification of M. Laska, ¶¶ 48-50.

than 84,000 times the EPA;s HA of 70 ppt, and PFOS was detected as high as 1,600,000 ppt, more than 22,000 times the EPA HA.[30]

Lake Holloman is home to many precious ecological resources, most of which are endangered by Defendants' pollution.[31] The Lake Holloman area has been officially recognized as a state Watchable Wildlife viewing area since 1996. The Lake Holloman area provides a variety of foraging and nesting habitat for over 73 species of migrating and resident wetland birds. It is the most important area within the Tularosa Basin for shorebirds like Wilson's phalarope and snowy plovers.[32]

Underscoring the ecologically sensitive nature of the affected ecosystem, two federally endangered species have been observed on Holloman: the northern aplomado falcon and the interior least tern. An additional 31 state-listed species or species of concern have been observed on Holloman. Of these, five species have been observed within the Lake Holloman area.

Within the Lake Holloman area there are four impoundments that were constructed in 1996 for the primary purpose of providing a disposal area for treated sewage effluent from the Waste Water Treatment Plant ("WWTP") on Holloman that have naturally attenuated into wetlands.[33] Emergent wetlands also occur along the margins of Lake Holloman primarily on the western edge and northern end of the lake. Dominant species include cattail and alkali bulrush.[34]

Although swimming and fishing are both prohibited at Lake Holloman per signage, it is unknown if the Air Force monitors and enforces this prohibition. Lake Holloman is open to boaters, including those who might allow individuals or pets to periodically enter the water. The

[30] *Id.*
[31] *See* Lake Holloman Recreational Area Development Environmental Assessment (Aug. 2009), *available at* https://apps.dtic.mil/dtic/tr/fulltext/u2/a636343.pdf; *see also* Certification of M. Laska, ¶¶ 43-45.
[32] Lake Holloman Recreational Area Development Environmental Assessment.at 142.
[33] *Id.* at 61.
[34] *Id.*

area is also open to the public for non-watersport recreation like bird watching, hiking, primitive camping, and limited waterfowl hunting. At certain times of the year, wind produces PFAS-laden foam that blows onto the shore presenting an exposure pathway for non-watersport recreation.[35] The ongoing exposure and persistence of PFAS continues to damage this and nearby habitats while creating a threat to human health. The potential surface water connection from Lake Holloman to ephemeral streams suggests a strong likelihood that PFAS has traveled far beyond the Lake boundaries.

III. Defendants Continue to Cause Severe Damage to Human Health and the Environment and Are Unwilling to Take Responsibility for the Cleanup of the Extensive Contamination.

Defendants were aware of potentially high levels of PFAS contamination at Cannon and Holloman for years before notifying the State and engaging in site inspections. After Defendants shared with the State that PFAS compounds were not only present at the Bases but were present at levels far exceeding the least restrictive guidance, the State took immediate action to attempt to coordinate containment and cleanup actions with Defendants. Defendants, however, maintained an adversarial approach to remedying the dangerous circumstances presented at the Bases and impinged on the State's right and duty to protect its citizens and the environment from the harm caused by the PFAS contamination.

In 2017, the State learned for the first time that the Air Force had conducted a preliminary assessment as early as 2015 and a scoping visit in 2016.[36] NMED did not learn until 2018 that the Air Force collected samples both on and off site at Cannon, which showed high levels of PFAS compounds.[37] Indeed, according to the Air Force, samples were also taken

[35] *See* Photographs of PFAS-laden Foam at Lake Holloman (taken March 13, 2019 at 6pm), attached as **Exhibit F.**
[36] *See* Certification of D. Cobrain, ¶¶ 15-16.
[37] *Id.* ¶ 18.

during the EPA's Third Unregulated Contaminant Monitoring Rule ("UCMR 3") in or around 2013. *See* Cannon Site Inspection Report, § 4.2.2. These results were not provided to NMED at the time or since then despite the State's requests.

In September 2018, NMED conditionally approved the 2018 Cannon Site Investigation Report, subject to a number of conditions that Defendants have yet to fulfill, including providing NMED with additional information associated with sampling efforts and remedial measures.[38] Defendants refused to comply with these requirements, and accordingly, on November 30, 2018, NMED issued a notice of violation against Defendants and requested that Defendants take corrective action at Cannon.[39] Defendants refused to take the action requested by NMED.

On December 18, 2018, Cannon's RCRA corrective action permit became final.[40] But the Air Force sued New Mexico in January 2019, challenging NMED's authority to regulate and compel PFAS cleanup under its state permit. Although the State has and will continue to defend its regulatory and permitting authority, the instant action was necessitated by the Defendants' refusal to address this crisis appropriately. The State pursues this relief under its authority to protect the public and the environment from an imminent and substantial endangerment.

On May 9, 2019, after conducting a sampling event at Lake Holloman, the State sent a letter to Defendants regarding the disturbing findings of extremely high levels of contamination

[38] *See* Ltr. from M. Hunter, Chief, Ground Water Quality Bureau, NMED, to C. Segura, Chief, Installation Support Section, AFCEC/CZOW, re: Soil and Groundwater Contamination with per- and poly-fluoroalkyl substances Cannon Air Force Base, Clovis, New Mexico (Sept. 26, 2018), attached as **Exhibit G.**

[39] Notice of Violation, Cannon Air Force Base, Soil and Groundwater Contamination with PFAS (Nov. 2018), attached as **Exhibit H.**

[40] Issuance of RCRA Hazardous Waste Permit for Cannon Air Force Base, New Mexico (Dec. 19, 2018), attached as **Exhibit I;** *see also* Certification of D. Cobrain, ¶ 24; Certification of M. Laska, ¶ 16.

in the waters of Lake Holloman, asking Defendants to close public access to the Lake.[41] Defendants refused to make any changes regarding restrictions at the lake.[42]

AUTHORITY AND ARGUMENT

By allowing the continued uncontrolled presence and migration of PFAS at Cannon and Holloman, Defendants are failing to protect the public and the environment from exposure to these toxic chemicals. In order to prevent Defendants from causing further harm, the State respectfully requests that this Court grant a preliminary injunction to mandate the expedited discovery, delineation of the contamination, and the measures described above. These measures are immediately necessary to protect the public health and the environment until the Court can issue a decision on the merits following trial.

I. Legal Standard for Obtaining a Preliminary Injunction

The primary purpose of RCRA is to regulate the management of hazardous waste "'so as to minimize the present and future threat to human health and the environment.'" *Meghrig v. KFC W., Inc.*, 516 U.S. 479, 483 (1996) (quoting 42 U.S.C. § 6902(b)). To effectuate this statutory purpose, RCRA empowers district courts to exercise "broad and flexible equity powers" to reduce or eliminate the risk of harm to human health. *United States v. Price*, 688 F.2d 2014, 211 (3rd Cir. 1982). In particular, 42 U.S.C. § 6972 grants district courts the authority to order preliminary injunctive relief in order to prevent irreparable harm. *Meghrig*, 516 U.S. at 484; *Francisco Sanchez v. Esso Standard Oil Co.*, 572 F.3d 1, 20 (1st Cir. 2009).

To obtain a preliminary injunction, the moving party must demonstrate: (1) a likelihood of success on the merits; (2) a likelihood that the movant will suffer irreparable harm in the

[41] Ltr. from Hector Balderas, New Mexico Attorney General, to USAF (May 9, 2019), attached as **Exhibit J.**

[42] Ltr. from Joseph Campo, Colonel, USAF, to Hector H. Balderas, New Mexico Attorney General (June 10, 2019), attached as **Exhibit K.**

absence of preliminary relief; (3) that the threatened injury to the movant outweighs whatever damage the injunction may cause to the defendant; and (4) that the injunction is in the public interest. *Attorney General of Oklahoma v. Tyson Foods, Inc*., 565 F.3d 769, 776 (10th Cir. 2009). These criteria are satisfied here, and thus, emergency relief is warranted.

II. The State is Likely to Prevail on the Merits of Its Case

The State will be able to make the required showing to succeed on its claim under RCRA, § 6972(a)(1)(B).[43] Section 6972(a)(1)(B) requires: (1) the defendant must be a person, including, though not limited to, one who was or is a generator of solid or hazardous waste, or one who was or is an owner of a solid or hazardous waste treatment, storage, or disposal facility; (2) that this defendant contributed to, or is contributing to, the handling, storage, treatment, transportation, or disposal of solid or hazardous waste; and (3) that such waste may present an imminent and substantial endangerment to health and the environment. *See Burlington Northern & Santa Fe Ry. Co. v. Grant*, 505 F.3d 1013, 1020 (10th Cir. 2010). Where these elements have been met, RCRA provides for injunctive relief. 42 U.S.C. § 6972(a).

A. The United States Is a Person that was a Generator of a Solid Waste and Hazardous Waste and Has Contributed to the Disposal of that Waste.

The State can easily satisfy the first element: that Defendants are persons that were or are generators of solid or hazardous waste. RCRA defines a "person" as including "each department, agency, and instrumentality of the United States." 42 U.S.C. § 6903(15). The Air Force is not exempted from the obligations of RCRA. Further, RCRA includes a clear and unambiguous waiver of sovereign immunity. *See id.* § 6961 ("The United States hereby

[43] The HWA also provides for injunctive relief where there presents an imminent and substantial endangerment of human health or the environment. NMSA 1978 § 74-4-10(A)(2). The arguments presented herein for relief under RCRA also warrant relief under the HWA.

expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement. . . .").

Defendants generated solid and hazardous waste at Cannon and Holloman. RCRA defines hazardous waste as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may—(A) cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." 42 U.S.C. § 6903(5).[44] "[F]or a waste to be classified as hazardous, it must first qualify as a solid waste under RCRA." *United States v. Self*, 2 F.3d 1071, 1076 (10th Cir. 1993).[45]

RCRA defines "solid waste" as "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. . . ." *Id.* § 6903(5). RCRA regulations define "discarded material" to include material which is "abandoned" or "recycled." 40 C.F.R. § 261.2(a)(2). A material is abandoned by being "[d]isposed of" or "[a]ccumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated." *Id.* § 261.2(b). "The term 'disposal' means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or

[44] New Mexico has adopted the same definition of hazardous waste as in RCRA. Compare NMSA 1978, § 74-4-14(K), with 42 U.S.C. § 6961(a).
[45] In addition, NMED has identified PFOS and PFOA as toxic chemicals. *See* 20.6.2.3103.A(2) and 20.6.2.7.T(2)(s) NMAC.

any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42 U.S.C. § 6903(3).

PFOS and PFOA are a discarded material, disposed of for decades by Defendants through the unrestrained discharges, leaks, and spills of PFAS-containing AFFF throughout Cannon and Holloman. Once PFAS reached soil, groundwater, or other resources, they ceased to be useful and may be deemed to be abandoned. *See Craig Lyle Ltd. P'ship v. Land O'Lakes, Inc.*, 877 F. Supp. 476, 482 (D. Minn. 1995). PFAS are not subject to an exclusion from the definition of solid waste at 40 C.F.R. § 261.4(a) and have not been granted a variance under 40 C.F.R. §260.30, and thus, fit within the statutory definitions of solid waste.

PFAS also satisfy the second element of the statutory definition of "hazardous waste:" they pose a "substantial present or potential hazard to human health of the environment." PFAS are, as described above, extremely toxic chemicals that are known to adversely affect human health. PFAS may pose additional adverse effects for human health given their mobility and bioaccumulation potential. PFAS also have additive effects, meaning that where more than one PFAS is present, the adverse impacts are more severe. RCRA's definition of hazardous wastes includes not only those solid wastes that do pose hazards to human health or environment, but also those that "may" do so. *American Chemistry Council v. EPA*, 337 F.3d 1060, 1064 (D.C. Cir. 2003). Further, Congress intended a liberal reading when deciding what substances were "hazardous" under RCRA. *Id.* at 1066.

Defendants engaged in the generation of hazardous and solid waste and contributed to the handing of such wastes by discarding large quantities of PFAS-containing AFFF at both Cannon and Holloman and failing to properly manage these releases. Because these solid and hazardous wastes present an imminent and substantial endangerment, Plaintiffs are entitled to relief.

B. PFAS Contamination at Cannon and Holloman Presents an Imminent and Substantial Endangerment to Human Health and the Environment.

The State is able to prove that the presence of PFAS in the groundwater, soil, surface water, and sediments at and spreading from Cannon and Holloman "may present an imminent and substantial endangerment to health or the environment," as required under RCRA. 42 U.S.C. § 6972(a)(1)(B). "Endangerment has been interpreted by courts to mean a threatened or potential harm." *Burlington*, 505 F.3d at 1020. Thus, it is not necessary to show proof of actual harm to health or the environment, so long as the risk is real. *Id.*; *see also Tyson Foods*, 565 F.3d 776. A court may grant relief "to the extent necessary to eliminate any risk posed by toxic wastes." *Burlington*, 505 F.3d at 1030. "[I]f an error is to be made in applying the endangerment standard, the error must be made in favor of protecting health, welfare and the environment." *Id.* at 1021.

To succeed under RCRA, the endangerment must be ongoing, but the conduct that created the endangerment need not be. *Id.* at 1020. Thus, that Defendants may be or are no longer routinely utilizing AFFF containing PFOA and/or PFOS, or using them in a different manner, does not defeat the State's claim. Because PFAS is still present in the groundwater and other resources at and around Cannon and Holloman, the public health and environment continues to be endangered. Moreover, the current identified commercial alternative to AFFF containing PFOA and/or PFOS, if used at these sites, suffers from similar hazardous effects to that of those PFAS compounds.

This is not a case about past contamination that no longer poses a danger. *C.f. Meghrig*, 516 U.S. 479 (holding that RCRA did not authorize action to recover costs of cleanup up toxic waste that did not pose a current threat). PFAS contamination is present at both Cannon and Holloman, is spreading, is adversely affecting the environment, and is putting the public at risk

of great harm. Defendants have taken no measures to effectively contain or remove the contaminants from the environment or provide a full analysis of the extent the contaminants present at and around the Bases.

For endangerment to be imminent, it must threaten to occur immediately; however, a finding of immanency does not require a showing that actual harm will occur immediately as long as the risk of threatened harm is present. *Burlington*, 505 F.3d at 1020. "[A]n endangerment is 'substantial' under RCRA when it is 'serious.'" "This does not necessitate quantification of endangerment, as an endangerment is substantial where there is a reasonable cause for concern that someone or something may be exposed to risk of harm by release, or threatened release, of hazardous substance in the event remedial action is not taken." *Id.* at 1021.

Defendants previously identified at least seventeen onsite AFFF release areas at Cannon associated with fire training areas, fuel spills, and aircraft crashes. *See* 2018 Cannon Site Inspection Report. Testing at these sites confirmed the presence of PFAS at levels well above the EPA's HA. The largest exceedances in groundwater have been reported in monitoring wells immediately adjacent to the property boundary. Groundwater at Cannon generally flows southeast, which is consistent with the where PFAS contamination has been detected offsite.[46] PFAS have been detected in groundwater up to approximately 2.5 miles southeast of the base. Soils at Cannon are also contaminated with PFAS at levels higher than EPA's HA, with the largest exceedances occurring at the aircraft hangars and in the Base's southwest corner. Samples also exceed the HA at North Playa Lake near the eastern boundary of the site.

At Holloman, Defendants identified five AFFF release areas onsite associated with training exercises and stormwater transport. Specifically, high levels of PFAS were found in the groundwater and soil at the evaporation pond and former fire training area at the site, among

[46] 2018 Cannon Site Inspection Report, at 12.

other locations, including Lake Holloman. Groundwater and surface water at Holloman generally flow southwest, which is again consistent with where PFAS exceedances have been identified at the site.

As evidenced by the sampling that occurred thus far, without any remedial action, PFAS contamination will continue to migrate throughout Cannon and Holloman and impact additional on- and off-site resources. The public has already begun to feel the impacts of this contamination, and the risk of further human exposure increases each day that action is not taken. The circumstances here present an imminent and substantial endangerment to human an environmental health, and the State is entitled to relief to protect the public from further harm.

III. Irreparable Harm Is Likely in the Absence of Injunctive Relief

To receive a preliminary injunction, the moving party must establish that it will suffer irreparable harm without the preliminary injunction—that is, that failing to grant the injunction will cause plaintiff to suffer an injury that is not "merely serious or substantial" but "certain, great, actual and not theoretical." *Vill. of Logan v. U.S. Dep't of Interior*, 577 Fed. Appx. 760, 766 (10th Cir. 2014) (quoting *Heideman v. S. Lake City*, 348 F.3d 1182, 1189 (10th Cir. 2003)).

Citizens of New Mexico live in the area and use the resources that have been, and will continue to be, affected. Specifically, citizens living near Cannon and the city of Clovis use groundwater to irrigate crops and care for livestock. Citizens living near Holloman use Lake Holloman for recreational purposes. Both communities rely on groundwater as a source of drinking water, either partially or completely. As in *Valley Community Preservation Commission v. Mineta*, 373 F.3d 1078 (10th Cir. 2004), there is sufficient proximity to the harm to show that the ongoing, unmitigated presence of contamination will cause irreparable harm.

Local businesses that rely on groundwater to nourish livestock and irrigate crops have also suffered as a result of PFAS contamination. For example, the Highland Dairy in Clovis, where sampling detected a combined level of PFOS/PFOA of 14,320 ppt at an irrigation well, has been forced to shut down due to the presence of contamination in its groundwater that has poisoned its cattle and land. There are other dairies within miles of Cannon that may face the same fate if immediate action is not taken.

In addition to dairy wells, additional irrigation wells, domestic wells, livestock wells, and potentially municipal wells are in the path of the flow of contaminants and are also at risk. If contaminated, the remedial costs as well as the social costs would be substantial. Given the scarcity of water throughout the State, the loss of these sources of water to contamination would have serious implications. *See, e.g., Vill. of Logan*, 577 F. App'x at 768 (calling into question the long-term viability of the Ogallala aquifer).

Ecological resources of the State are and will continue to be damaged, although the full extent of those injuries has not yet been fully identified. Environmental harm is, by its nature, generally irreparable. *Valley Cmty. Pres. Comm'n*, 373 F.3d at 1086 (citation omitted). Further, the longer persistent and biomagnifying pollutants remain in the environment, devoid of protective controls, the more difficult it becomes to impose an appropriate remedy. Because these resources are contaminated, the risk of human exposure severely limits recreational opportunities as well. Those who live and recreate around Lake Holloman, for example, already lost the opportunity to fully enjoy camping, hunting, and bird watching or hunting at the site.

Without immediate steps, PFAS will continue to spread throughout Cannon and Holloman, into the environment, and into communities surrounding the Bases, eventually reaching public water supplies and thereby exposing countless people to harmful PFAS. Any

exposure to PFOA or PFOS can be toxic, even at low levels. Exposure to PFOA and PFOS has serious health implications. These chemicals persist in the environment; thus, once released, they will remain and continue to cause harm for years and years. The public health will suffer, irreplaceable ecological resources will be lost, and local economies will suffer catastrophic losses. As some of these injuries already manifested, this harm is not speculative in nature. Further, the impacts associated with continued exposure to PFAS could be greater than currently expected, as the full extent of dangers associated with the chemicals are still yet to be discovered.

These present and potential harms cannot be readily or expeditiously cured. Thus, because the public health and environment have already been injured and will continue to be injured without immediate action to identify the extent of the contamination and stop its spread, injunctive relief is needed to prevent potentially devastating impacts throughout New Mexico.

IV. The Balance of Equities Tips in Favor of the State

The balance of equities in this case tilts strongly in favor of preventing continued harm to the citizens and environment of the State of New Mexico. As described above, the harms that have been and will continue to be suffered by the State and the citizens of New Mexico are sufficiently likely, and thus, the balance of harms favors the issuance of an injunction. *Amoco Prod. Co. v. Vill. of Gambell, AK*, 480 U.S. 531, 545 (1987).

In the context of RCRA, the court must take into account the statute's overarching purpose: to address situations where hazardous wastes imperil human health. *See Maine People's Alliance & Natural Res. Def. Council v. Mallinckrodt Inc.*, 471 F.3d 277, 296–97 (1st Cir. 2006). RCRA's citizen suit provision places "a congressional thumb" on the scale in favor of environmental protection. *See id.* at 297. This congressional pre-balancing of the interests must

be weighed against a defendant's complaints about the cost of injunctive relief. *See id.* at 297–98. In the end, costs cannot and should not thwart human safety.

"There is substantial authority that when a case is brought pursuant to an environmental or public health statute, including RCRA and the CWA, the primary focus shifts from irreparable harm to concern for the general public interest. . . . Thus, although it is not appropriate to dispense with the required showing of irreparable harm, it is permissible as part of the traditional balancing process to lessen the weight attributable to that usually dispositive factor." *Wilson v. Amoco Corp.*, 989 F. Supp. 1159, 1171 (D. Wyo. 1998).

Any hardship Defendants may face as a result of this Court's issuance of a preliminary injunction would be temporary and monetary. Such hardships pale in comparison to the irreparable harm that the citizens of the State will continue to face in the absence of any remedial actions. When weighing temporary economic injury against "preventable human suffering," courts typically find that the balance of equities "'tips decidedly' in favor of the latter." *Golden Gate Rest. Ass'n v. City & Cty. of San Francisco*, 512 F.3d 1112, 1126 (9th Cir. 2008) (quoting *Lopez v. Heckler*, 713 F.2d 1432, 1437 (9th Cir. 1983)). Further, financial concerns alone generally do not outweigh environmental harm. *Valley Cmty. Pres. Comm'n*, 373 F.3d 1078.

There is no public interest served by allowing the PFAS contamination to remain in the environment and continue to migrate uncontrolled into the public's resources and bioaccumulate. Unlike other cases where courts have found that projects that would serve public interests such as transportation, *id.* at 186-187, public safety, *id.*, or gas production, *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 531 F.3d 1220 (10th Cir. 2008), there is simply no benefit conferred by Defendants' inaction. To the contrary, the damages suffered by the State and the public by further delay on the part of Defendants are significant. As described above, the public health,

economic resources, ecological resources, and recreational resources are all at risk of substantial, irreparable harm. Thus, the balancing of harms tips strongly in favor of the State.

V. Issuance of a Preliminary Injunction Is in the Public Interest

The well-recognized and constitutionally based interest of protecting the public health and the environment weighs heavily in favor of a preliminary injunction in this case. Article XX, Section 21 of the New Mexico Constitution provides that "protection of the State's beautiful and healthful environment is . . . declared to be of fundamental interest to the public interest, health, safety and the general welfare." Allowing decades-old toxic chemicals to remain in the resources in the State and allowing them to continue to migrate and poison more and more of the public and the environment for no reason other than to avoid the responsibility of cleaning them up serves no public interest. Accordingly, the Court should promote the public interest and issue the preliminary injunction in favor of the State.

CONCLUSION

Citizens of New Mexico and the environment, including resources upon which citizens depend for their livelihood, are being exposed to an excess of toxic chemicals released as a result of decades of Defendants' releases of PFAS-containing AFFF throughout Cannon and Holloman. Well beyond a mere risk of harm, these exposures cause significant and potentially irreversible injuries. Without immediate relief, these harms will continue. Plaintiffs met their burden to show a likelihood of success on the merits at trial, irreparable harm in the absence of injunctive relief, and that both the balance of equities and the public interest favor an injunction. As such, Plaintiffs respectfully requests this Court to grant this Motion for Preliminary Injunction.

Dated: July 24, 2019

Respectfully submitted:

HECTOR H. BALDERAS
NEW MEXICO ATTORNEY GENERAL

/s/ P. Cholla Khoury
P. Cholla Khoury
William G. Grantham
Assistant Attorneys General
Anne Minard
Robert Lundin
Special Assistant Attorneys General
ckhoury@nmag.gov
wgrantham@nmmag.gov
aminard@nmag.gov
rlundin@nmag.gov
Post Office Drawer 1508
Santa Fe, NM 87504
(505) 717-3500

NEW MEXICO ENVIRONMENT DEPARTMENT

/s/ Jennifer Hower
Christopher Atencio
Assistant General Counsel
Jennifer Hower
General Counsel
Christopher.atencio@statem.nm.us
Jennifer.hower@state.nm.us
New Mexico Environment Department
121 Tijeras Ave. NE
Albuquerque, NM 87102
Phone: (505) 222-9554
Fax: (505) 383-2064

Counsel for Plaintiff the State of New Mexico

CERTIFICATE OF SERVICE

I CERTIFY that, on July 24, 2019, I filed the foregoing using CM/ECF which cause the parties of record to be served by electronic means, as more fully reflected on the Notice of Electronic Filing.

/s/P. Cholla Khoury