



New Mexico Environment Department



Topic: PFAS Issues: U.S. and New Mexico
James Kenney, Cabinet Secretary

Radioactive and Hazardous Materials Committee
October 15, 2024



PFAS Issues: U.S. and New Mexico



Image: <https://www.sixclasses.org/videos/pfas>



PFAS Issues: U.S. and New Mexico

U.S. and New Mexico big box furniture stores in New Mexico



"Allaway Fabric Protectant is a water-based product used to protect fabrics against soiling from standard household stains. Allaway Fabric Protectant is water-based, non-toxic and non-hazardous."

"Ingredients: Purified Water, C-6 Fluoropolymer, cation surfactant."



PFAS Issues: U.S. and New Mexico

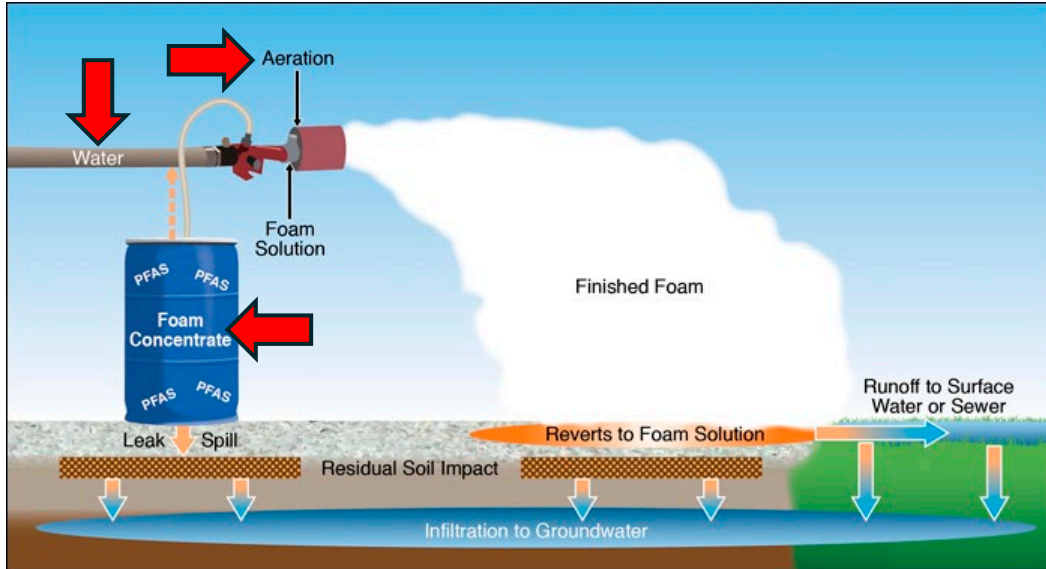


Image: Plastics Engineering/
April 2024

How AFFF Works

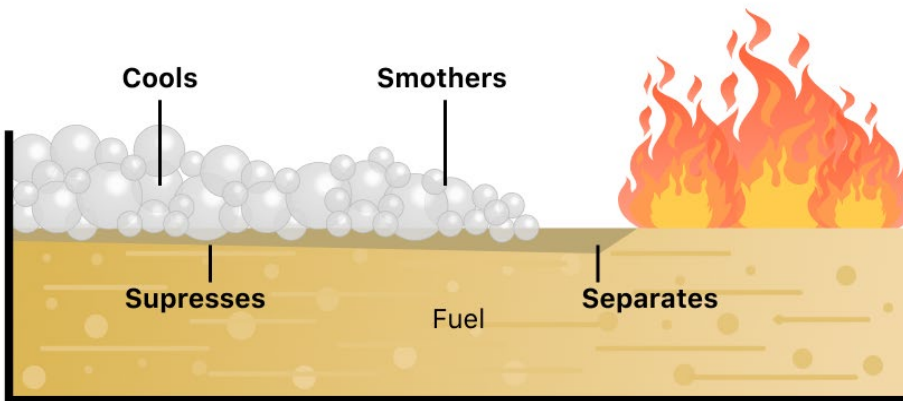


Image: Airman 1st Class Amber Powell/
Air National Guard



PFAS Issues: U.S. and New Mexico





PFAS Issues: U.S. and New Mexico

**HOLLOMAN
WASTEWATER
EVAPORATION
POND**

WATER IS NON-POTABLE
KEEP AREA CLEAN

- NO SWIMMING
- NO BOATING
- NO FISHING
- NO SHOOTING OR HUNTING

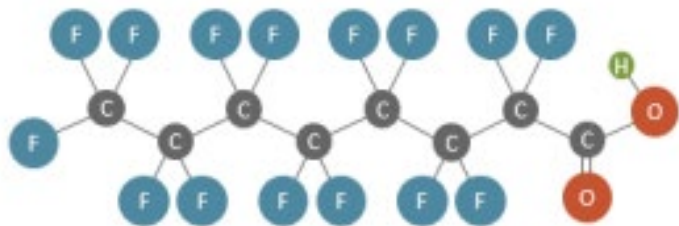
VEHICLE USE IS RESTRICTED TO DESIGNATED AREA
NO OFF-ROAD TRAVEL PERMITTED
VIOLATORS WILL BE PROHIBITED FROM USING THIS
AREA AND MAY BE SUBJECT TO CRIMINAL
PROSECUTION
PROPERTY OF THE US AIR FORCE





PFAS Issues: U.S. and New Mexico

PFAS Chemistry and Health Impacts



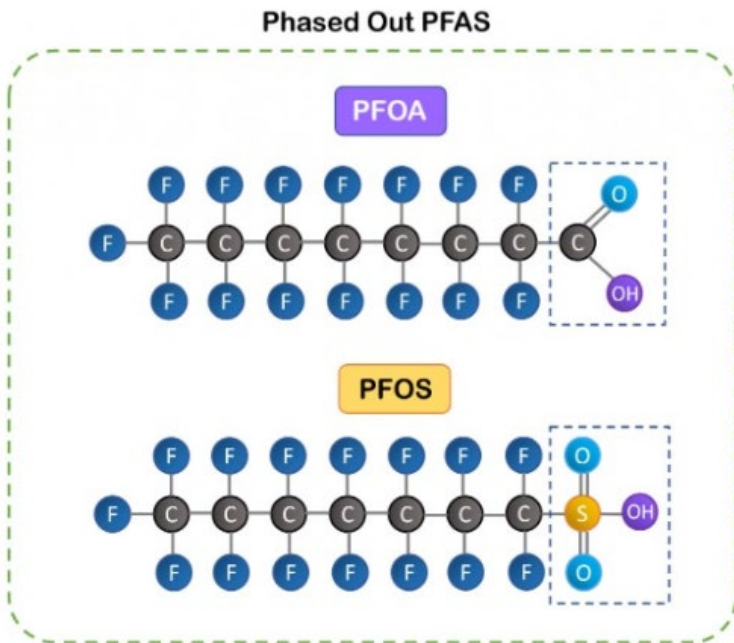
This PFAS is Perfluorooctanoic Acid or simply “PFOA” and was used in non-stick and stain-resistant consumer products, food packaging, fire-fighting foam, and industrial processes. Production was phased out in 2002.

- ❑ There are an estimated 19,000 chemicals that fall into the PFAS family.
- ❑ Two common characteristics of PFAS:
 1. Carbon chain – Four, six, or eight carbon atoms stitched together with fluorine atoms attached (e.g., C4, C6, or C8 compounds). The longer the carbon chain, the stronger the PFAS.
 2. Functional group – These give rise to subtle differences in the PFAS characteristics and therefore applications.

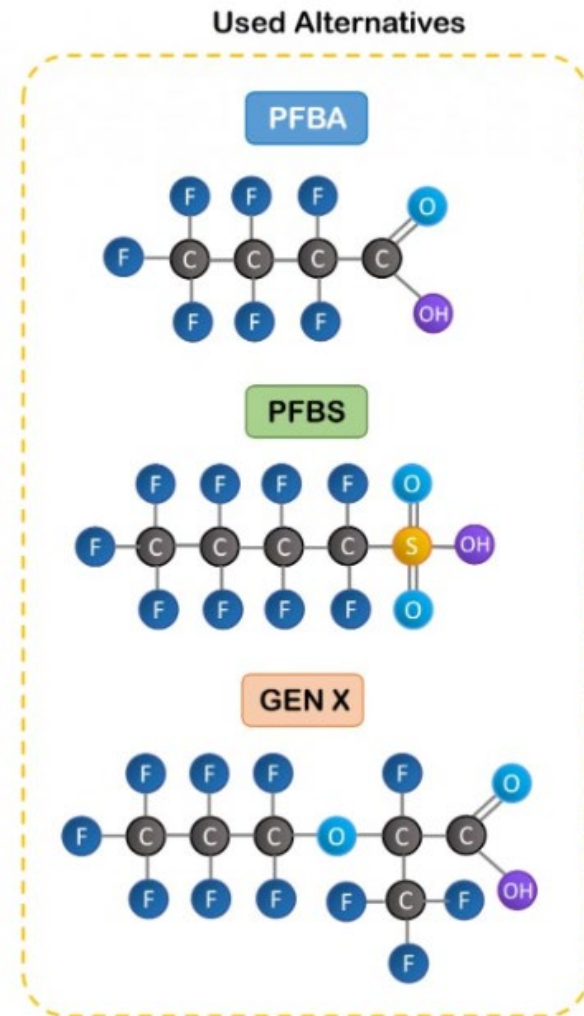


PFAS Issues: U.S. and New Mexico

Long Chain PFAS Health Impacts (6 or more carbon atoms)



Short Chain PFAS Health Impacts (6 or less carbon atoms)





PFAS Issues: U.S. and New Mexico

Long Chain PFAS Health Impacts (6 or more carbon atoms)

Cancer: Linked to kidney, testicular, and breast cancers.

Endocrine Disruption: Interference with thyroid function, leading to hypothyroidism or other thyroid disorders.

Immune System Suppression: Reduced vaccine response and weakened immunity.

Liver Damage: Elevated liver enzymes, leading to liver toxicity and potential damage over time.

Developmental Issues: Impaired fetal development, low birth weight, skeletal variation, and developmental delay.

Cholesterol Elevation: Increased levels of total cholesterol and low-density lipoprotein (LDL).

Reproductive Effects: Disrupted fertility in both men and women, menstrual irregularities/lower sperm quality.

Kidney and Liver Disease: Increased risks of chronic kidney disease and non-alcoholic fatty liver disease.

Short Chain PFAS Health Impacts (6 or less carbon atoms)

Thyroid Dysfunction: Still associated with disruptions to thyroid hormone production, but generally to a lesser degree than long-chain PFAS.

Liver Effects: May cause liver toxicity, although the effects are typically less severe than those from long-chain PFAS.

Immune System Effects: Some short-chain PFAS have been shown to suppress immune function, but evidence is less consistent compared to long-chain PFAS.

Kidney Effects: Short-chain PFAS may still affect kidney function, though they are excreted more rapidly from the body.

Potential for Developmental Toxicity: Although evidence is less robust, some studies suggest that short-chain PFAS may affect fetal development and lead to lower birth weights.



PFAS Issues: U.S. and New Mexico



To whom it may concern,

02.23.2024

RE: TRI Supplier Notification Requirements under 40 CFR 372.45

This letter provides notification that the Daikin America, Inc. product Unidyne TG-5601 contains Perfluorooctanoic acid (CAS # 335-67-1, 0.2 ppb) and Perfluorobutanoic acid (CAS # 375-22-4, 55 ppb).

These Chemical Substances are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

This notification must not be detached from the SDS and that any copying and redistribution of the SDS shall include copying and redistribution of this notice attached to copies of the SDS subsequently redistributed.

Best regards,

Gerard Manley, CHMM
Regulatory Environmental Manager
Daikin America, Inc.
gmanley@daikin-america.com

Ingredients:

PFOA = 0.2 ppb

- Long Chain
- Production phased out in 2002.

PFBA = 55 ppb

- Short Chain
- Production phased out in 1998.

For comparison, the concentration of PFOA in this product is 50x higher than U.S. EPA's drinking water standard.



PFAS Legal Landscape: U.S. and New Mexico

Federal and State Laws, Regulations and Policies



PFAS Strategic Roadmap: EPA's Commitments to Action 2021–2024





Federal Safe Drinking Water Act

Highlights:

- ❑ In April 2024, the U.S. EPA established drinking water standards for six PFAS compounds, including PFOA, PFOS, PFNA, PFHxS, PFBS, and GenX chemicals (See 89 FR 32532).
- ❑ The finalized rule maintains limits of 4 nanograms per liter or parts per trillion (ppt) for PFOA and PFOS and includes new limits for four compounds.
- ❑ By 2027, public water systems must complete monitoring for these PFAS, followed by on-going compliance monitoring.
- ❑ By 2029, public water systems must comply with these standards.





State Water Quality Act - Groundwater

Highlights:

- Neither the U.S. EPA or NMED have established a numerical PFAS standards for groundwater.
- NMED listed three PFAS compounds as toxic pollutants in Section 20.6.2.7 NMAC: PFOS, PFOA, and PFHxS.

September 15, 2020

Cannon Air Force Base to pay \$250k for PFAS permit violations; contamination cleanup slow

Cannon Air Force Base will pay a \$251,000 "administrative fee" to the state in lieu of the \$1.7 million fine that the New Mexico Environment Department (NMED) imposed on the Air Force earlier this year for alleged permit violations related to PFAS contamination. PFAS, or per- and poly-fluoroalkyl substances, are toxic, human-manufactured chemicals that can [...]

By [Kendra Chamberlain](#)



Federal Clean Air Act (CAA) and State Air Quality Control Act

Highlights:

- ❑ On August 29, 2024, New Jersey, New Mexico, and North Carolina petitioned the U.S. EPA to add four specific PFAS chemicals to the list of Hazardous Air Pollutants (HAPs) under the CAA Section 112(b)(3). These include: PFOA, PFOS, PFNA, and GenX.
- ❑ PFAS air emissions affect surface water, groundwater and soil, and result in the contamination of public and private drinking water sources.
- ❑ PFAS cleanup activities that are occurring around the country under federal or state permits may give rise to unintended and uncontrolled air emissions of PFAS. Remediation may result in air dispersion of these chemicals into communities or other geographic areas of our environment.
- ❑ On September 18, 2024, U.S. EPA responded that it has initiated the review of our petition.



Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Highlights:

- ❑ On July 8, U.S. EPA's rule designating two widely used PFAS – PFOA and PFOS – as hazardous substances under CERCLA went into effect. What does this mean?
 - ❑ Reporting of any release of PFOS or PFOA that meet or exceed the default reportable quantity of one pound within any 24-hour period to the National Response Center;
 - ❑ Facilities must provide notice of releases of these chemicals through publication in the local newspaper;
 - ❑ Post release, facilities must also provide follow-up reports within 30 days to community emergency coordinators;
 - ❑ Federal agencies that sell or transfer property must also now provide notice of storage, release, or disposal of PFOS and PFOA on the property (along with a covenant warranting it has cleaned up, or will clean up as required, the past contamination);
 - ❑ Department of Transportation must begin to regulate PFOS and PFOA under the Hazardous Materials Transportation Act.



Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Highlights:

- ❑ CERCLA enforcement discretion policy prioritizing enforcement of those who significantly contributed to the release of PFAS chemicals into the environment (i.e., chemical companies, military bases, etc.) as opposed to passive receivers (i.e., agricultural operations, landfills, water treatment plants, etc.).
- ❑ The listing of these PFOA and PFOS as hazardous substances also allows for natural resource damage claims and assessments under CERCLA.

NEWS RELEASE

For immediate release

July 8, 2024

Contact: Drew Goretzka, Communications Director
New Mexico Environment Department
505.670.8911 | drew.goretzka@env.nm.gov

New Mexico seeks costs and damages for PFAS contamination from the U.S. Department of Defense under new U.S. Environmental Protection Agency rule

The New Mexico Environment Department (NMED), New Mexico Office of Natural Resources Trustee (NMONRT) and the New Mexico Attorney General (NMAG) today amended New Mexico's lawsuit against the United States regarding per-and polyfluoroalkyl substances (PFAS) contamination present in and around military communities across New Mexico.

The Environment Department's mission is to protect and restore the environment and to foster a healthy and prosperous New Mexico for present and future generations.



Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Highlights:

- ❑ In 1987, Executive Order (EO) 12580 was executed to broadly implement CERCLA across multiple federal agencies.
- ❑ In 1996, EO 13016 modified EO 12580 to delegate abatement and settlement authorities to the Secretary of Defense with the concurrence of the U.S. EPA Administrator.
- ❑ Then both EO 12580 and EO 13016 were codified into federal law at 10 U.S. Code §§ 2700-2711, commonly referred to as the Defense Environmental Restoration Program.
- ❑ Today, one of the largest and most prolific PFAS polluters in the United States – is fully in charge of its own PFAS clean-up.

Air Force Investigates 7,000-Gallon PFAS Spill at Cannon

Sept. 3, 2024 | By David Roza

The Air Force is investigating a spill of about 7,000 gallons of water containing firefighting chemicals at Cannon Air Force Base, N.M.

SHARE ARTICLE

The image shows a preview of a news article. At the top right, there are social media sharing icons for Facebook, X, Email, LinkedIn, and Print. Below these is the text "SHARE ARTICLE". The main headline is "Air Force Investigates 7,000-Gallon PFAS Spill at Cannon" in a large, bold, dark blue font. Below the headline is the date and author: "Sept. 3, 2024 | By David Roza". At the bottom, there is a short summary: "The Air Force is investigating a spill of about 7,000 gallons of water containing firefighting chemicals at Cannon Air Force Base, N.M."



Federal Resource Conservation and Recovery Act (RCRA) State Hazardous Waste Act

Some New Mexico households eligible for free well testing to detect PFAS

Laila Freeman

Mon, September 16, 2024 at 4:01 PM MDT · 1 min read



Some New Mexico households eligible for free well testing to detect PFAS



JESSICA GARATE
@KRQEGARATE



Federal Resource Conservation and Recovery Act (RCRA) State Hazardous Waste Act

Highlights:

- ❑ On February 8, 2024, the U.S. EPA proposed two rules in response to Governor Michelle Lujan Grisham's Oct. 2021 petition to EPA Administrator Regan to address PFAS under RCRA.
 - ❑ Rule 1: Clarifying the regulatory definition of "hazardous waste" to indicate that it is broader than the current regulatory definition of characteristic and listed wastes. This regulatory clarification will better align with the RCRA's broader statutory definition of hazardous waste. Final rule anticipated this year.
 - ❑ Rule 2: Designating nine types of PFAS as "hazardous constituents" under RCRA corrective action by including them in Appendix VIII, 40 CFR Part 261. Final rule anticipated Q2 of 2025.





Federal Resource Conservation and Recovery Act (RCRA) State Hazardous Waste Act



NEWS



UNITED STATES AIR FORCE

Air Force begins field work to investigate PFAS at former Reese AFB

Published July 30, 2020

By Malcolm McClendon

Air Force Installation and Mission Support Center Public Affairs

JOINT BASE SAN ANTONIO-LACKLAND, Texas (AFNS) -- The Air Force Civil Engineer Center began investigative field work in June, for per-and polyfluoroalkyl substances (PFAS) around the former Reese Air Force Base, near Lubbock, Texas.

"These investigations take us one step closer to fully understanding the nature and extent of contamination and helps us prepare for actions we may need to take," said Stephen TerMaath, Chief of the Air Force's Base Realignment and Closure Program Management Division. "This is part of our commitment to protecting human health and drinking water supplies on and around all of our bases affected by our former Air Force activities."

From 1970 until the base closure, Reese, like other Air Force bases with flying missions, trained Air Force firefighters to extinguish aircraft fires to save lives and property using aqueous film forming foam containing PFAS. Repeated use and discharge of the foam led to the contaminants seeping into the groundwater there.

"We didn't do this in neglect or violation of environmental laws; for a lot of years we all understood this to be a safe product and used it in accordance with the manufacturer's instructions," said TerMaath. "Now with the TCEQ's issuance of Protective Concentration Levels for 16 PFAS chemicals, the Air Force is taking aggressive measures to ensure the community has safe drinking water and find long-term solutions to the contamination."

Over the next six weeks AFCEC will install 25 monitoring wells in a 12 square mile area downgradient of the former base, which will provide a better understanding of source areas and migration patterns of PFAS contamination in groundwater. Residents in the area will likely see drilling rigs working near area roadways.

These investigations are part of the PFAS Affected Property Assessment investigation, required by the Resource Conservation and Recovery Act (RCRA) Permit and Compliance Plan issued to the Air Force by the Texas Commission on Environmental Quality.



PFAS Legal Landscape: U.S. and New Mexico

What's next? Disrupt pathways.

Consumer education:

Reduce loading to passive receivers like utilities, (e.g., biosolids, solid waste, wastewater)

Industrial pre-treatment programs:

Permitting programs to limit passive receivers

Prevent media shifting:

Stop gap measures to ensure regulatory program overlap.





PFAS Legal Landscape: U.S. and New Mexico

What's next? Legislative Action.

Cost to buy PFAS

to make consumer products

\$50 - \$1000
per pound

Cost to remove and destroy PFAS

from municipal wastewater

\$2.7 million - \$18 million
per pound

- ❑ **Adopt a Non-Essential PFAS ban**
 - ❑ California: Banned PFAS in food packaging starting in 2023. Enacted laws restricting PFAS in cosmetics, textiles, and juvenile products.
 - ❑ Maine: By 2030, prohibit the sale of products containing intentionally added PFAS, with limited exemptions. PFAS reporting.
 - ❑ Washington: Bans PFAS in food packaging and firefighting foam. Expanding restrictions on other consumer products based on safer alternatives.
 - ❑ Minnesota: Recently passed a comprehensive ban on PFAS in consumer products, phased approach.
 - ❑ Vermont: Prohibits PFAS in food packaging, carpets, rugs, and ski wax.
- ❑ **Strengthen New Mexico Hazardous Waste Act**



PFAS Legal Landscape: U.S. and New Mexico

What's next? Investigations, clean-up, enforcement.

MARCH 13, 2020

PENTAGON IDS MORE SITES, INCLUDING 4 IN NM

The Pentagon releases an updated list of 651 military sites that might be contaminating local groundwater with PFAS. The report includes four U.S. Army installations in New Mexico: the Army National Guard armories in Rio Rancho and Roswell, the Army Aviation Support Facility in Santa Fe, and White Sands Missile Range. The new list, which dated to fall 2019, came as a surprise to state officials. "To our knowledge, the DOD did not reach out beforehand to inform us that they are expanding their scope to include facilities that had a lesser likelihood of having used PFAS," said NMED spokeswoman Maddy Hayden. "They also have not informed NMED of when these site inspection reports will be completed or provided."

Federal Government:

U.S. Department of Defense
U.S. Department of Energy

Municipal Government:

Utilities (e.g., biosolids, solid waste, wastewater)

Private Sector:

Consumer goods