NORTHERN NEVADA
Public Health

Health and Regulatory Impacts of PFAS in Drinking Water in Washoe County

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Presentation Overview

- What are PFAS chemicals?
- Pathways for PFAS chemicals to enter drinking water
- Health concerns of PFAS chemicals
- Regulatory requirements for Public Water Systems (PWS's) in Washoe County
- Private well sampling grant received from Nevada Division of Environmental Protection (NDEP)

What are PFAS chemicals?

PFAS stands for Per- and Polyfluoroalkyl Substances:

- A category of human-made chemicals used since the 1930-1940s to make products that resist water, grease, heat, and stains.
- Can cause serious health problems when exposed to them over a long period of time, or at certain critical life stages like pregnancy and early childhood.
- Many PFAS chemicals have been largely phased out due to health and environmental concerns, but there are thousands of different PFAS, and they are still found in use and in the environment.

Extremely persistent: They don't break down easily in the environment or the human body, earning the nickname *"forever chemicals."*

Widespread exposure: Found in soil, water, air, and many consumer products (non-stick cookware, water-resistant clothing, food packaging, firefighting foams, stain-resistant carpets and upholstery, and cosmetics)

Pathways for PFAS Chemicals to Enter Drinking Water

Industrial releases: Factories that manufacture or use PFAS chemicals can release them into wastewater, through air emissions and in solid waste or sludge.

Firefighting foams: Commonly used at military bases, airports, and fire-training sites and contain numerous PFAS chemicals. Foam can seep into soil and groundwater, therefore contaminating wells and surface waters.

Consumer product use and disposal: PFAS containing items release chemicals when used or thrown away.

Wastewater treatment: PFAS chemicals can't be broken down and is passed into treated water that flows into rivers/lakes. Biosolids can have concentrated PFAS chemicals which may be applied to farmland or disposed of in landfills.

Atmospheric transport: PFAS chemicals can evaporate into air and travel long distances and deposit through rain or snow, even in remote regions.

Accidental spills: Industrial accidents, transport spills, or foam system failures can release concentrated PFAS chemicals directly into the environment.

Health Concerns of PFAS chemicals

Documented Health Effects of PFAS exposure:

- Increased cholesterol levels
- Immune system suppression (e.g., reduced vaccine response)
- Thyroid hormone disruption
- Potential effects on growth and development in children
- Kidney and testicular cancer
- Pregnancy-related risks (e.g., preeclampsia, low birth weight)

Other Emerging Concerns:

- Immune development in children
- Fertility in men and women
- Increased risk of cardiovascular disease

- **Studies have also shown that multiple PFAS compounds, even at low individual concentrations, can combine to produce a greater overall health risk.**

Regulatory Requirements for Washoe County PWS's

- **NNPH currently regulates 69 PWS's in Washoe County.**
  - All serve groundwater or are consecutive connections from TWMA's Surface Water System.

- **Every five years, EPA requires monitoring for contaminants that may be present in drinking water but are not yet subject to drinking water regulations, known as the Unregulated Contaminant Monitoring Rule (UCMR).**
  - UCMR 3 required monitoring between 2013-2015 by all Community and Non-Transient and Non-Community PWS's serving > 10,000 people for 30 contaminants, 5 of which were PFAS. All PFAS results for UCMR3 from PWS's in Nevada were below the minimum reporting limits (70 ppt).
  - UCMR 5 requires monitoring between 2023-2025 by all PWS's serving > 3,300 people and a nationally representative random sample of 800 PWS's serving < 3,300 people for 29 PFAS compounds and lithium. Data is still being collected by PWS's and compiled by EPA and NDEP. To date, only one Washoe County PWS has PFAS data reported by EPA and NDEP from UCMR 5.

- **Final PFAS rule was announced by EPA on April 10, 2024, with initial monitoring required by 2027 and compliance with the Maximum Contaminant Levels required by 2029.**

Regulatory Requirements for Washoe County PWS's

- **In November 2024, NDEP contracted with Broadbent and Associates to offer PFAS sampling to all NV PWS's.**
  - To date, PFAS data for seven Washoe County PWS's has been posted on NDEP's website from this sampling effort.
- **In May 2025, EPA announced a plan to extend compliance deadlines for two PFAS compounds and that they may rescind or reconsider regulations for other PFAS compounds. They also stated they plan to establish a federal exemption framework for certain PWS's.**
- **NDEP must be granted primacy by EPA to implement and enforce the final PFAS rule in Nevada.**
  - NDEP plans to request a two-year extension from EPA with respect to the date final primacy revisions are due. This will not extend initial monitoring or compliance deadlines for PWS's. EPA will have primary enforcement responsibility until NDEP receives primacy.
  - NDEP plans to allow data for any PFAS sample collected since 2019 to be utilized towards initial monitoring.
  - PWS's serving <10,000 people will be required to collect four quarters of samples for initial monitoring.
  - PWS's serving >10,000 people will be required to collect two samples within 12 months for initial monitoring.
- **The PFAS Rule applies to 23 Community & 11 Non-Transient Non-Community PWS's in Washoe County. NNPH will assume compliance oversight for all Washoe County PWS's once NDEP is granted primacy by EPA.**

Treatment and Funding Options for Washoe County PWS's

There are numerous treatment options on the market for PFAS removal:

- Granular Activated Carbon: contaminants stick to the surface of the carbon granules due to physical and chemical interactions.
- Ion Exchange: removes contaminants by swapping them with harmless ions on a specially designed resin.
- Reverse Osmosis: removes contaminants by forcing water through a semi-permeable membrane.

Numerous funding options are available through NDEP to Washoe County PWS's for PFAS removal:

- State Revolving Loan Fund
- Bipartisan Infrastructure Law Assistance for Small and Disadvantaged Communities
- Emerging Contaminants/Small or Disadvantaged Communities Grant

EHS staff work closely with NDEP and the PWS's to connect them to all available funding sources.

Private Well Sampling Grant

NNPH has been awarded a grant from NDEP to offer PFAS sampling of private wells in Washoe County.

- Grant is for $227,826 and provides for personnel and operating costs, lab testing services and other costs as needed.

The grant is expected to provide free PFAS water sampling to approximately 300 Washoe County residents to help inform them of their drinking water quality and identify the presence of PFAS chemicals in the local aquifers. Grant deliverables and their planned completion dates are:

- Develop a web-based platform for managing private well users' applications and educational materials to aid in the interpretation of analytical results. (Jan-Mar 2026)
- Obtain PFAS sample collection training for NNPH personnel. (Jan-Mar 2026)
- Compile a list of interested private well users; schedule and collect samples from those wells. (Spring-Fall 2026)
- Contract with a Nevada-certified laboratory for the analysis of these samples for PFAS using either EPA method 533 or EPA method 537.1. (Spring 2026)
- Deliver samples to the contracted laboratory for analysis. (Spring-Fall 2026)
- Deliver the analytical results to the private well owner, NNPH, and NDEP. (Spring-Fall 2026)

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