



## Understanding PFAS and Its Impacts on Construction in the FNSB and State of Alaska

# Agenda

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What are PFAS?

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PFAS Sources

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PFAS in FNSB/State of Alaska

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How may PFAS affect your projects?

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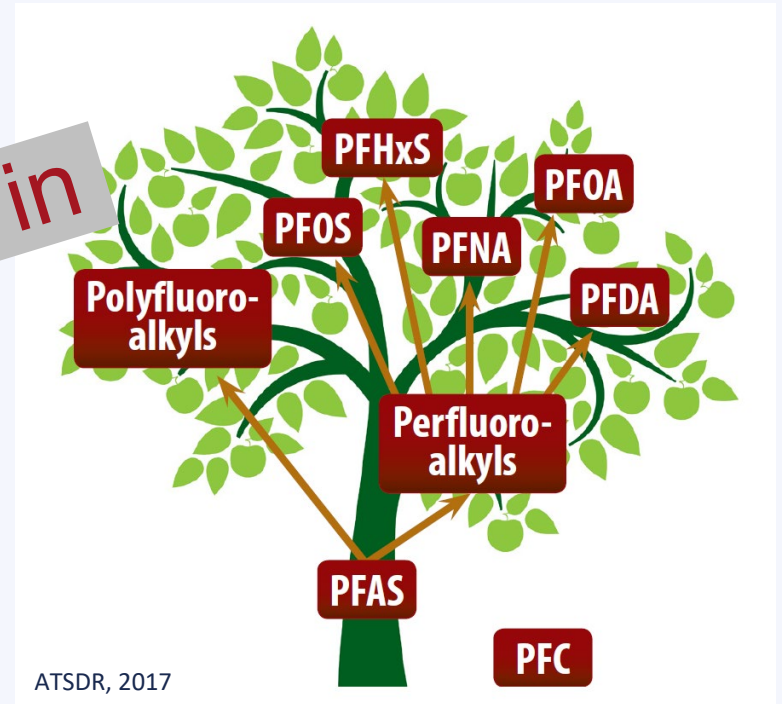
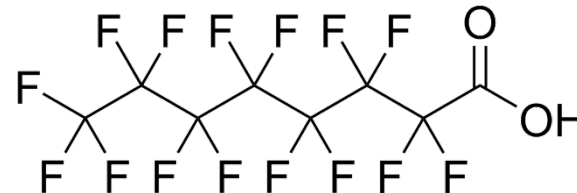
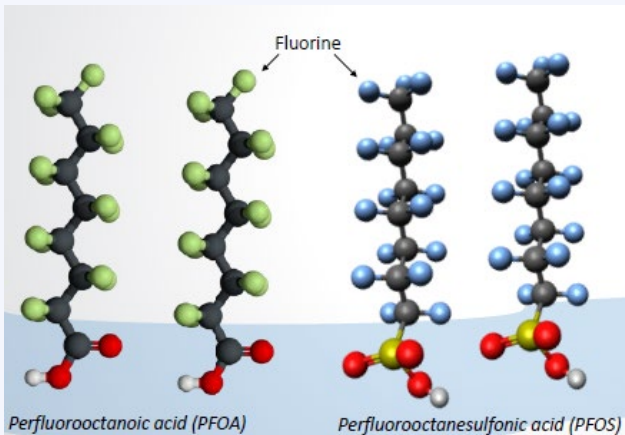
CMMPs

# Introduction

## What are PFAS?

- Per- and polyfluoroalkyl substances (PFAS)
  - “FOREVER CHEMICALS”
- Widely used since 1940s
- When released into the environment
  - Toxic at parts per trillion (ng/L) levels

99% of Americans have PFAS in their bloodstream



Wikipedia Public Domain, 2007

# Where are PFAS Found? - Quick Overview

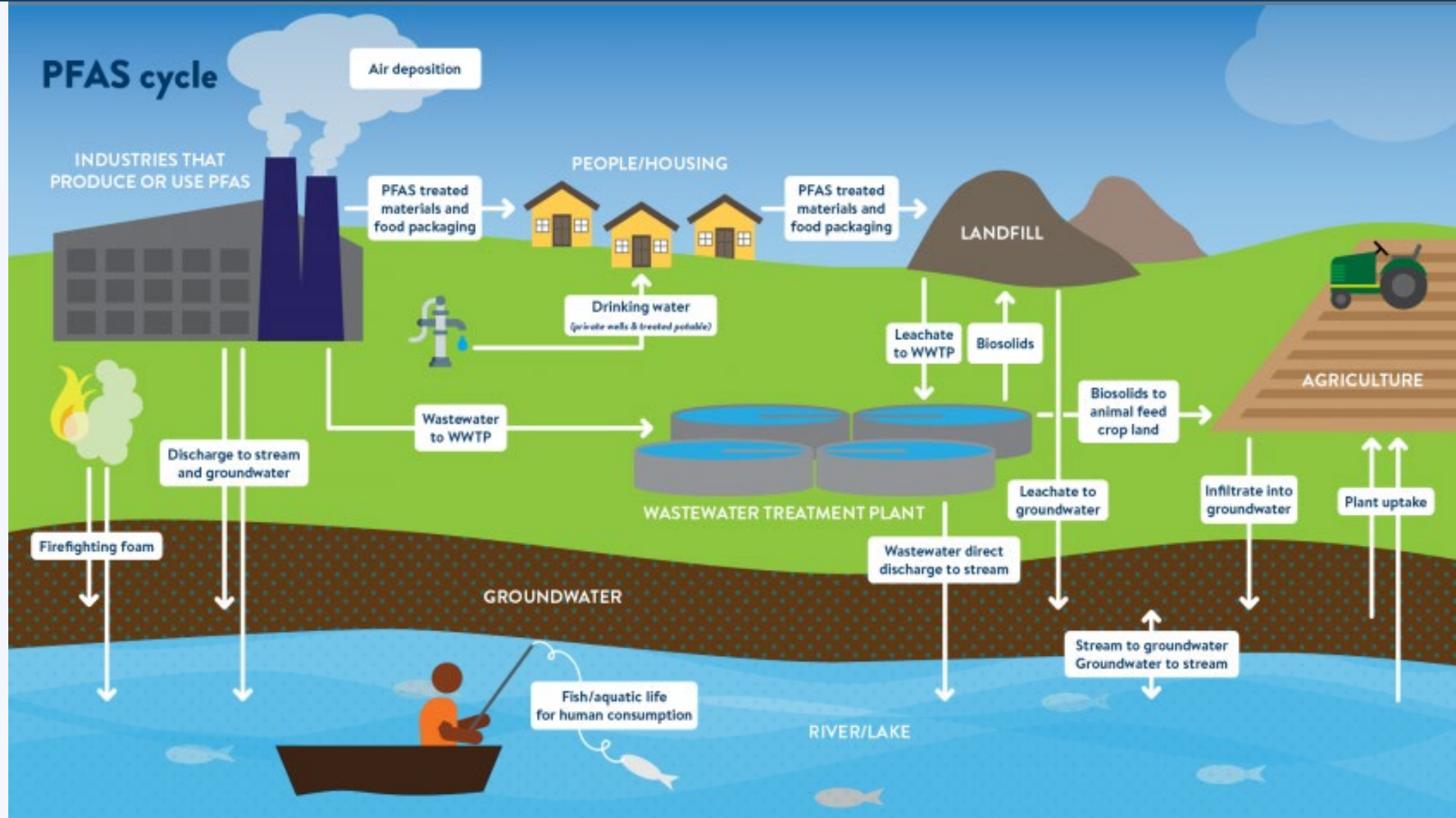
Refineries,  
Airports  
and, Fire  
Departments

Landfills

WWTP



# Environmental Concerns – PFAS Pathways

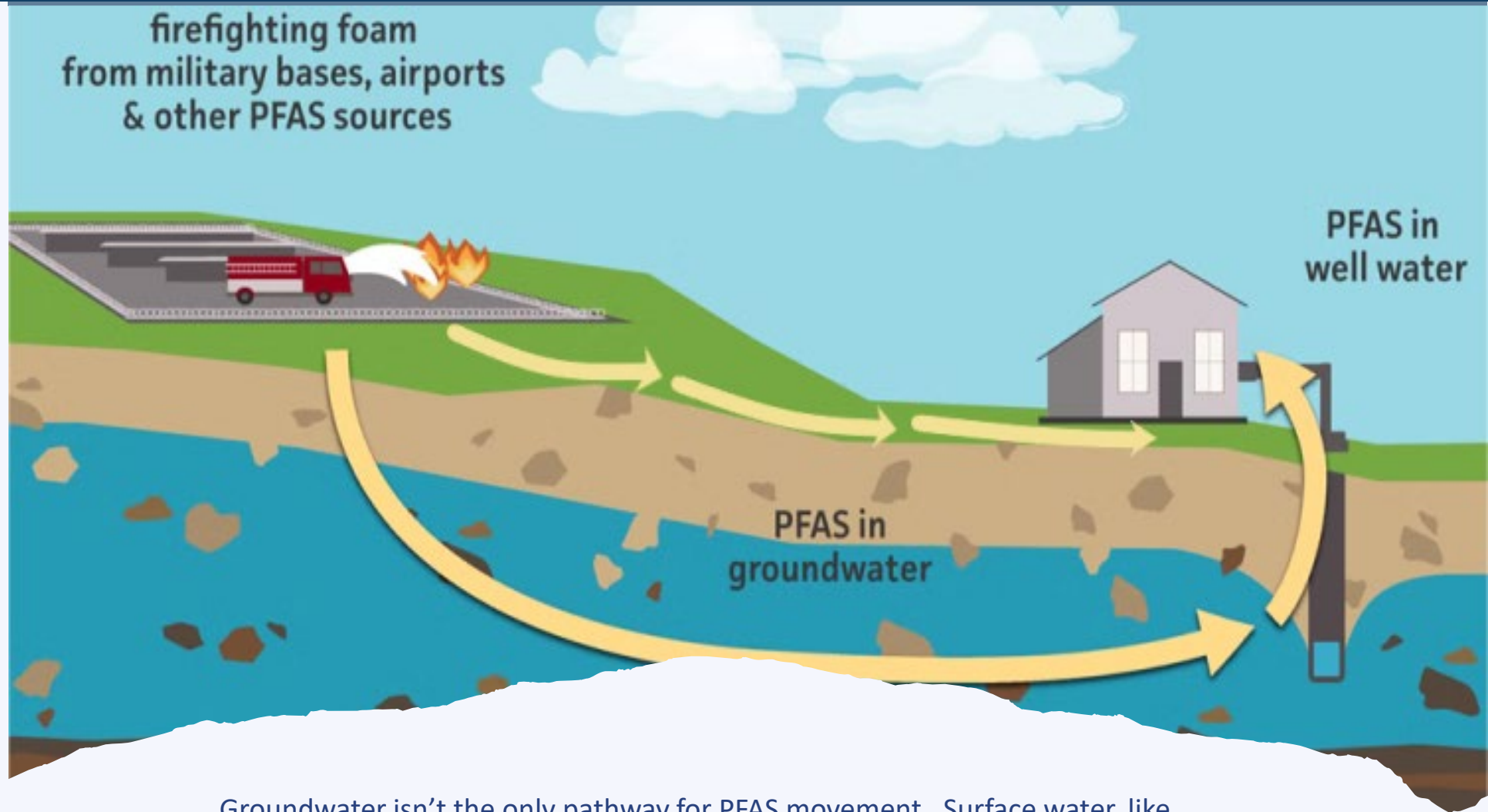


Credit: Minnesota Pollution Control Agency





# PFAS Pathway at Part 139 Airports



Groundwater isn't the only pathway for PFAS movement. Surface water, like ponds, ditches and other bodies of water can easily transport contamination.

# Nationwide Developments in PFAS in 2024

- EPA Announced Maximum Contaminants Levels (MCLs) in 2024
  - [Interactive Map](#)
- EPA Revised Regional Screening Levels (RSLs) - Soils
- EPA designated PFOS and PFOA as hazardous substance (CERCLA)

EPA National Primary Drinking Water Standards			
PFAS		Maximum Contaminant Level Goal	Maximum Contaminant Level
PFOA		0	4.0 ppt
PFOS		0	4.0 ppt
PFNA		10 ppt	10 ppt
PFHxS		10 ppt	10 ppt
GenX		10 ppt	10 ppt
Mixture of 2 or more	PFNA	1 (unitless) Hazard Index	1 (unitless) Hazard Index
	PFHxS		
	GenX		
	PFBS		

# ADEC PFAS Regulations

Contaminant of Potential Concern	Human Health Soil Cleanup Level	Migration-to-Groundwater Soil Cleanup Level	Groundwater Cleanup Level	Drinking Water Action Level
Arctic Zone				
PFOA	2.2 mg/kg (ppm)	1.7 µg/kg (ppb)	400 ng/L (ppt)	70 ppt
PFOS	2.2 mg/kg (ppm)	3.0 µg/kg (ppb)	400 ng/L (ppt)	
Under 40 Inch Zone				
PFOA	1.6 mg/kg (ppm)	1.7 µg/kg (ppb)	400 ng/L (ppt)	70 ppt
PFOS	1.6 mg/kg (ppm)	3.0 µg/kg (ppb)	400 ng/L (ppt)	
Over 40 Inch Zone				
PFOA	1.3 mg/kg (ppm)	1.7 µg/kg (ppb)	400 ng/L (ppt)	70 ppt
PFOS	1.3 mg/kg (ppm)	3.0 µg/kg (ppb)	400 ng/L (ppt)	



# Contaminated Materials Management Plans (CMMPs)

## What is a CMMP/CSMP?

- Document used to inform DEC and project team how disturbed and (potentially) contaminated materials will be managed
- Prior testing must have been done to inform the CMMP
- Contaminated material must not be spread to other, not-contaminated areas

		SUBMITTED TO: [Redacted]
		BY: Shannon & Wilson, Inc. 2355 Hill Road Fairbanks, Alaska 99709 (907) 479-0600 www.shannonwilson.com
FINAL	CONTAMINATED SOILS MANAGEMENT PLAN [Redacted]	
SHANNON & WILSON		April 2023 Shannon & Wilson No: 109531-003



# What to Know

## Questions to ask when coordinating upcoming projects



- Does PFAS exist on-site?
  - Has any testing been done?
  - If so, do you have a copy of the report?
- Is PFAS above actionable levels?
  - What are the current regulatory levels?
- Has PFAS been delineated?
  - Has a site characterization been completed?
- Is there PFAS in ground or surface water?
- Are there any nearby receptors?
- Is a CMMP/CSMP required?
  - If so, is the CMMP/CSMP up-to-date (regulation changes)?



A wide-angle photograph of a winter landscape. In the foreground, a snow-covered field with a dirt road leads towards a dense line of evergreen trees. In the background, a range of rugged, snow-capped mountains is visible under a clear, deep blue sky. The word "Questions?" is superimposed in large white text across the middle of the image.

# Questions?

Kristen.Freiburger@Shanwil.com  
907-458-3146

# REMEDIATION TECHNOLOGIES

## Options for Handling Contaminated Media

- Groundwater and Surface Water
  - Railcar materials to lower 48
  - Viking Facility in Anchorage (currently not an option)
  - On-site Treatment (various media)
    - GAC, Resin, Electrochemical oxidation, foam frac, etc.
- Soil Stockpile Disposal
  - Incineration (we have one in FNSB!)
  - On-site Treatment (mobile incineration...also in AK!)
  - Other destruction technologies
  - In-situ carbon placement
  - Reminder: Landfills will not take your PFAS soils!





# Graphical approaches to PFAS Forensics

- Radar Plots

