Society of SAME American Military Engineers Omaha Post

WELCOME

VIRTUAL MEETING WILL BEGIN AT

11:30 AM Central

Society of American Military Engineers

Omaha Post

February 10th Meeting

Dedicated to National Security Since 1920

Omaha Post Meeting

Society of American Military Engineers

Omaha Post

February 10th, 2026 Meeting

Society of SAME American Military Engineers Omaha Post

Meeting Agenda

- Pledge of Allegiance
- New Member/Guest Introductions
- Invocation
- Lunch
- Announcements
- Presentation
- Q&A
- Split Kitty Drawing
- Closing Remarks

Society of SAME American Military Engineers Omaha Post

Pledge of Allegiance

I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands, one Nation under God, indivisible, with liberty and justice for all.

Introductions

Introductions

- Welcome Student Chapter Members
- Welcome New SAME Members
- Introduction of Guests

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Invocation

Please join us in the invocation before we dismiss for lunch

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Lunch

Dismiss by table

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Announcements

- **AFCEA Luncheon**
  - Topic: Metro Community College's (MCC) Prototype Lab and the college's contribution to STEM.
  - Thursday, February 26, 2026
  - 11:15 AM – 1:00 PM (CST)
  - Beardmore Event Center, 3750 Raynor Parkway, Bellevue, NE 68123
  - Registration Options
    - Free for AFCEA members
    - Guests = $20
  - Click Here for More Information and to Register

Announcements

- ►2026 Post HS Student Scholarships
  - Four scholarships worth $2,500 per year for up to 5 years
    - Student Mentoring Program Scholarship – HS seniors who participated and presented at least once in the SMP Program
    - Doug Plack Scholarship – open to HS seniors pursuing STEM
    - Mary McKernan Needs-Based Scholarship – open to HS seniors with financial need pursuing STEM
- **https://www.same.org/omaha/scholarships/**
- **Applications due March 1st**
  - Email LannaeLong@gmail.com

Announcements

- ►SAME Engineering and Construction Camps
  - Applications are now open for the six SAME STEM Camps.
  - The Students are selected by HQ SAME and the Camp Directors.
  - **Camp Applications due March 11, 2026**
- **https://www.same.org/omaha/scholarships/**
- ►Interested in being a SAME Mentor at the STEM Camps?
  - ►Email sbayer@hgl.com for more information

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Announcements

- **SAME Monthly Post Meeting - March**
  - ▶ March 10th at Field Club of Omaha
  - ▶ Topic: Mobile Mapping and Aerial LiDAR

Announcements

- **SMP Judges and Volunteers Needed!**
  - Student Mentorship Program (SMP) Competition on **March 26th**
  - Location: Scott Conference Center
  - Please contact Nicole Hunter at samesmp@gmail.com if you are interested in judging or volunteering for the competition.

Announcements

- **A/E/C Masters: Teeing Up for Connections**
  - Tee up for an afternoon of great connections, friendly competition, and a chance to learn more about the organizations that help our industry thrive!
  - Whether you're new to the field or a seasoned pro, this event is your chance to meet fellow "Masters" of the A/E/C industry and expand your professional network.
  - Date/Time: April 15th from 3:00-5:00 PM (CST)
  - Location: Legends Patio Grill & Bar, 6920 Pacific St, Unit 100, Omaha, NE 68106
  - Cost: $25 for members of participating organizations or $30 for non-members
  - **Click Here for More Information and to Register**

Announcements

- **Save the Date for the SAME Missouri River Joint Engineer Training Symposium (JETS)**
  - Mark your calendars for 2026 SAME Missouri River Joint Engineer Training Symposium (JETS) hosted by Omaha & GKC Posts in Omaha, Nebraska -
  - **May 27-29, 2026**
  - More information coming soon!
  - Click here for more information and for registration once it is open.

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Aqueous Film Forming Foam (AFFF) Management/Disposal

Joey Maloney

Business Development Manager, Clean Harbors

JOEY MALONEY

CLEAN HARBORS BUSINESS DEVELOPMENT MANAGER

- Clean Harbors
- Bayer Animal Health/Crop Science
- Elanco Animal Health

- B.A. Double Major Economics and Environmental Studies
- Over 15 years Managing Hazardous Waste
- Over 10 years in HSE mainly in Environmental Compliance
- Chemist by Trade not by Education

Aqueous Film Forming Foam (AFFF) Management and Disposal Review

he branches.

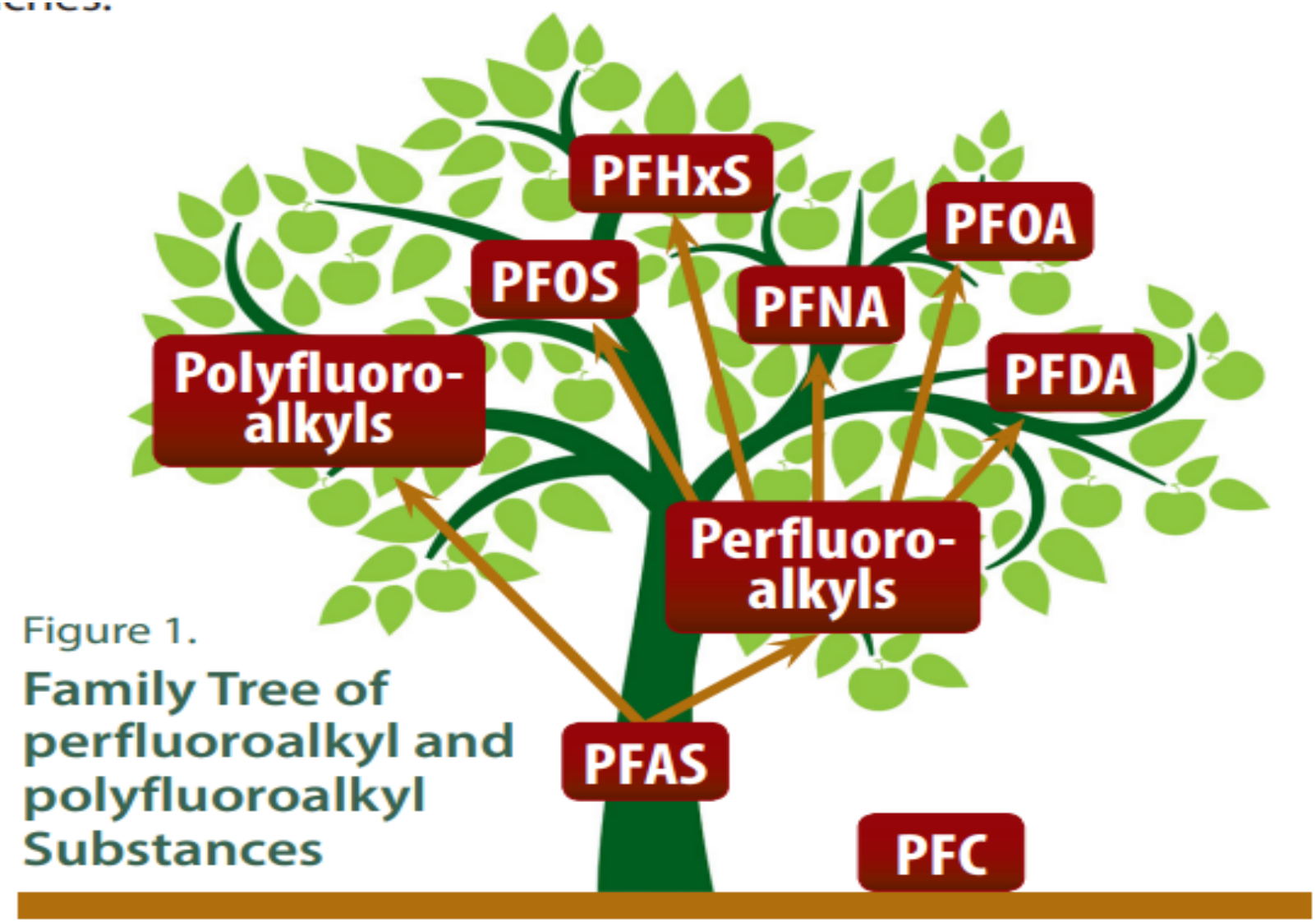


Figure 1.

Family Tree of perfluoroalkyl and polyfluoroalkyl Substances

Toxicity and Exposure Information

PFAS Substances

- PFOS Perfluorooctane sulfonic acid : GHS Warning Skin Irritant
- PFOA (aka C8) Perfluorooctanoic acid :GHS Warning/Danger/Corrosive Carcinogen and Reproduction hazard
- PFNA Perfluorononanoic acid :GHS Warning/Danger/Corrosive Carcinogen and Reproduction hazard
- PFDA Perfluorodecanoic acid :GHS Danger suspect cancer causing, Fertility damage
- PFOSA (aka FOSA) Perfluorooctanesulfonaminde : GHS Warning Eye and Respiratory Irritation
- PFHxS Perfluorohexane sulfonic acid : GHS Danger Corrosive Skin and Eye damage

Toxicity and Exposure Information

AFFF Solutions

- 3%-6% up to 20% fluorinated compound
- Health Hazard: A cancer-causing agent (carcinogen) or substance with respiratory, reproductive or organ toxicity that causes damage over time (a chronic, or long-term, health hazard).

Pollution Potential- A single 5 - gallon bucket of AFFF Concentrate at 30,000 ppm can bring 37 billion gallons of water above the drinking water criteria of 4ppt

ARFF truck bladders average 100-500 gallons of AFFF concentrate

Fomtec©
AFFF 3% M

FOMTEC AFFF 3% M

Fomtec AFFF 3% M is an aqueous film forming foam concentrate (AFFF) consisting of a blend of fluorocarbon-, hydrocarbon surfactants and various solvents and stabilisers. Only C6 Pure fluorosurfactants are used in Fomtec AFFF-formulations. Fomtec AFFF 3% M utilises the unique film forming effect to cut off oxygen supply to the fire and the oleophobic properties of the foam enables a stable foam blanket to suppress reignition of the fire.

- Short chain C6 Pure fluorochemistry
- Approved to QPL-listed MIL-PRF-24385F, UL 162, ULC, ICAO level B and level C, FM 5130
- Tested and approved for sprinkler application
- Suitable for Class A and B fires

AIRLINE INDUSTRY

Aqueous Film Forming Foam

Clean Harbors specializes in the safe removal and destruction of Aqueous Film Forming Foam (AFFF). We work closely with major airlines and airports across North America to help manage AFFF releases and fire suppression system transitions. We have handled millions of gallons of AFFF and treated over 8 billion gallons of PFAS-contaminated water.

Sustainable Alternatives

As airlines and airports move away from AFFF to more sustainable alternatives, Clean Harbors is ready to help you make the transition, too. We offer a suite of sustainable solutions including:

- Line cleaning/rinsing
- System dismantling
- Foam replacement
- Transportation and disposal of AFFF, AFFF rinsate and contaminated debris at Clean Harbors hazardous waste incinerators and Subtitle-C-permitted closed-loop landfills

Leading the Way

Clean Harbors is the industry's only cradle-to-grave, single-source provider offering greater than 99.9999% PFAS elimination with our Total PFAS Solution program. We are staying on the leading edge of treating PFAS-contaminated water with mobile filtration systems for clients across the United States, and we help each client develop the most cost-effective treatment plan. Our team of experts works with engineering firms and end-user clients to treat the full lifecycle of each project including:

- Analytical review of influent water
- Treatment system installation
- Operation and maintenance of treatment systems
- Spent media management
- Tailored scalable solutions

LEARN MORE

Your environmental and financial health is too important to gamble on untested and unproven methods of PFAS remediation. Our Total PFAS Solution has been developed and deployed for clients large and small for one reason: they work. Trust the North American leader in environmental and industrial services to take care of any PFAS problems you may encounter.

Email us: PFAS@cleanharbors.com

Airports

- Hangers
- ARFF Vehicles
- AFFF Inventory Management

Emergency Response – AFFF Release

- Brunswick, ME Airport
- PPG Industries
- JBAB
- Fort Belvoir

Additional Opportunities – AFFF Transitions

- DOD – Military installations/bases
- Oil Terminals
- Industrial Customers
- Off-Shore Vessels

Clean Harbors Commitment:

- Developed and approved – AFFF transition SOP
- ARFF – SOP
- Certificate of completion


CleanHarbors
CleanHarbors
Total PFAS Solution
Enhanced SCID Technology
Enhanced
SCID
Separate Concentrate Isolate Destroy

Enhanced cleaning technology for PFAS | AFFF impacted equipment

- AFFF Changeouts
- ARFF Decontamination
- Fire Response Water
- Pipe Cleaning
- Landfill Leachate
- RO Reject water

Our Approach

Our Solution

- A non-toxic, biodegradable solution.
- Our solution creates micelles that capture PFAS in contaminated equipment (**even short chains**!).
- Specialized media removes the PFAS laden micelles from rinsewater - concentrating contamination for small volume disposal.
- After micelles are removed, our treatment train filters the rinsewater to non-detect by EPA 1633 allowing for discharge at most locations.
- Full-scope management, treatment, and disposal.

PFAS@cleanharbors.com
www.cleanharbors.com

FAST, EFFECTIVE, SAFE

SCID : Separate, Concentrate, Isolate, Dispose or Destroy

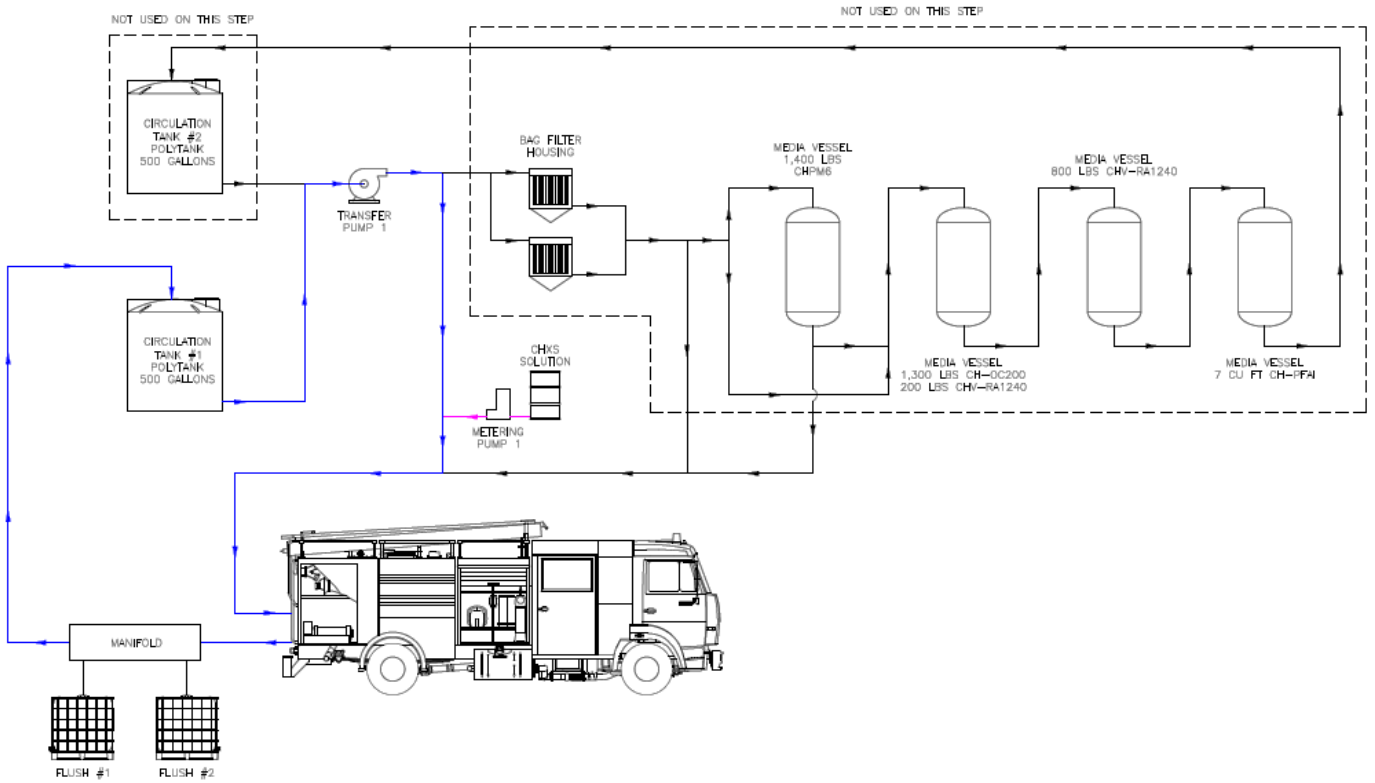
Minimizes Transformation and Liberation Potential
Reliable and Tested Method – Meets Strictest of Discharge Criteria
Over **12 Billion Gallons** of PFAS Impacted Water Treated and Discharged

Potable applications **10ppt-500 ppt** total PFAS concentrations. Carbon and Resin adsorption and ion exchange

Non potable applications **100 ppt-12 ppm** options grow for absorption and ion exchange media

Enhanced SCID* **5ppm-50 ppm-** ARFF clean outs, landfill leachate, RO reject water. Patent pending micelle introduction and removal system as a pre-treatment step to treat the most difficult PFAS impacted water sources.

Enhanced SCID* Fire Truck System



Step #1 / Day 1

- Drain Concentrate (disposal)
- 2 Hot Water Rinses (disposal)

Step #2 / Day 1

- Add CHRESX Solution
- Circulate Solution: Tank, Valves and Plumbing (Est 4 hours)

Step #3 / Day 2

- Rinsate Treatment Using CHPM6 Media (Est 4 to 6 hours)

Step #4 / Day 2

- Treatment Train – Rinseate treatment through series of adsorption and ion exchange media
- Achieve Non-Detection PFAS Results For Discharge or Disposal

Our Total PFAS Solution

- PFAS Sampling
- PFAS Analysis
- Drinking Water Solutions
- Industrial Water Solutions
- Soil Remediation
- AFFF Management
- Transportation
- Disposal

PFAS@cleanharbors.com

Company Overview

Broad Asset Infrastructure

- **More than 100 Waste Management Facilities**
  - 9 Incinerator units
  - New Rotary Kiln came on line in Q4 2024 at Kimball, NE (70k additional tons)
  - 11 Landfill Sites, 5 Closed Loop
  - 18 Treatment, Storage & Disposal Facilities (TSDF)
  - 9 Wastewater Treatment Operations
  - 16,000+ Company Vehicles
- **Key Acquisitions:**
  - HydroChem PSC 2021
  - Thompson Env 2023
  - Hepaco Env 2024
- **Recognized as a Global 100 Most Sustainable Corporation**

Remediation Strategies

- Finding the ***Right*** Solution
- Remediation Strategies – Water
- Remediation Strategies - Soil
- Evaluating Solutions
  - Permitting and Oversight
  - Emissions Controls

Remediation Strategies - Water

What is being treated?
- Drinking water
- Ground water
- Industrial water
- Wastewater

What is in the water?
- Solids (Dissolved or Suspended)
- pH
- Total Organic Carbon
- Contaminates (tables or excel files)
  - VOC/SVOC * Metals
  - PFAS * Herbicides / Pesticides

What are the goals/objectives?
- Non-Detection Results
- Discharge criteria
- Temporary / Mobile System
- Permanent / Long-term System
- Rental, Lease, Purchase
- Footprint size available

Discharge and Waste
- Point of discharge
- Flow rate restrictions
- Local public water treatment system
- Criteria for discharge

Large Modular Tanks (LMTs)

Larger Volume Filtration

- Size options: 250,000 gallons to 3.5M gallons
- 1-month Frac Tank Rental breakeven
- Setup in 1 day
- No Confined Space Entry Needed
- Liner Disposal (2 to 3 Rolloffs depending on size)

Filtration vs. Disposal

Mobile Treatment Trailers and Temporary Systems

- Uses
  - Construction Dewatering
  - Investigation Water
  - Frac Tank Waste
  - Sanitary / Storm Discharge Points
  - Release Management (AFFF, Fuel…)
  - Temporary System During Construction

- Cost Factors
  - Contaminates of Concern (ex: PFAS, VOC/SVOC, Metals)
  - Volume of Waste
  - Disposal Outlet Distance

JB Pearl Harbor – Hickman / Red Hill

- Release of JP-5 from WWII era fuel storage facility
- 3 weeks from inception to full operation.
- Airlift of 25 x 1MGD mobile and freestanding treatment systems for flushing and treating of water distribution systems
- Airlift and construction of a 5 MGD treatment system treating 3500 GPM of impacted water from the Red Hill aquifer
- Up to 20 technicians and operators to prepare, operate, relocate and manage the 1MGD systems and ultimately the 5MGD system.
- Shipping units from the mainland to Honolulu required ~40:C-5 Globemaster or equivalent flights.

Remediation Strategies – Soil / Solids

What is being remediated?
- Soil
- Debris (what kinds)
- Sludges

What are the goals / obstacles ?
- Cleanup criteria
- Preferred methods vs required
- Proximity to populations
- Access or work restrictions
- Water table vs excavation depth

What is in the material?
- Site history and project background
- pH
- Contaminates of concern
  - VOC/SVOC
  - PFAS
  - PCBs
  - * Metals
  - * Asbestos
  - * Other

Transportation Options
- Rail access / spur (large projects)
- End dump / Rolloffs
- Vactrucks / Tankers
- Who will sign paperwork

Soil Remediation and Transportation

As a **single-source provider**, one call anywhere in the continental U.S. and Canada

Our remediation services include:

- Sheeting and Shoring
- Dewatering
- Braced Excavations
- Technical Excavation
- On-Site-Soil Project Management
- In-situ PFAS Soil Remediation

Scalable – example: from 30 cubic yards of contaminated soil to 20,000 cubic yards of contaminated soil at a large manufacturing facility.

Permitting and Oversight Level

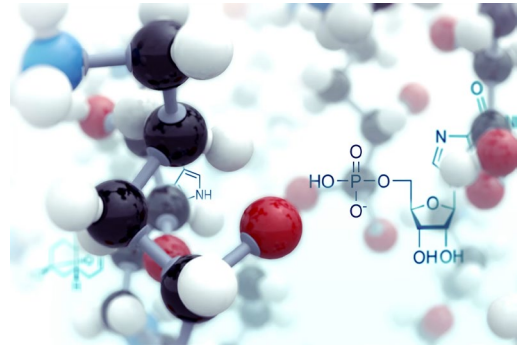
Determining facility certification, level of permitting, and oversight

Not all thermal destruction facilities are the same. There are levels of classification that determine what type of material is accepted there and what levels of controls are in place.

Key questions to consider:

- What level of testing have been already performed or are planned? OTM-45, OTM-50, 0010
- What is the compound list they used for determination?
- Is it permitted for haz or non-haz material?
- What liability protection is available with the destruction choice?
- Does the disposal company take ownership of the material?

Emissions Controls



Matter cannot be **created** or **destroyed**, but it can change forms

Why is that important?

- Destructive technologies will all generate a waste stream – the question is what is it and what are they doing with it?
- 100% destruction cannot be proven

Thermal Technologies

- Wildly studied and independently vetted for effectiveness.
- Private studies in the past year to confirm that PIDs (Products of Incomplete Destruction) are not entering the environment.
- These tests are very expensive but show that hazardous waste incineration is sound for PFAS

Emissions Testing

Aragonite Utah – Hazardous Waste Incinerator

DoD and EPA collaborated with Clean Harbors on this study

Clean Harbors achieves up to 99.9999% PFAS destruction in EPA test

The study was conducted last year. It further validates Clean Harbors' ability to destroy potentially hazardous chemicals like PFOA and PFAS at its Aragonite, Utah, facility.

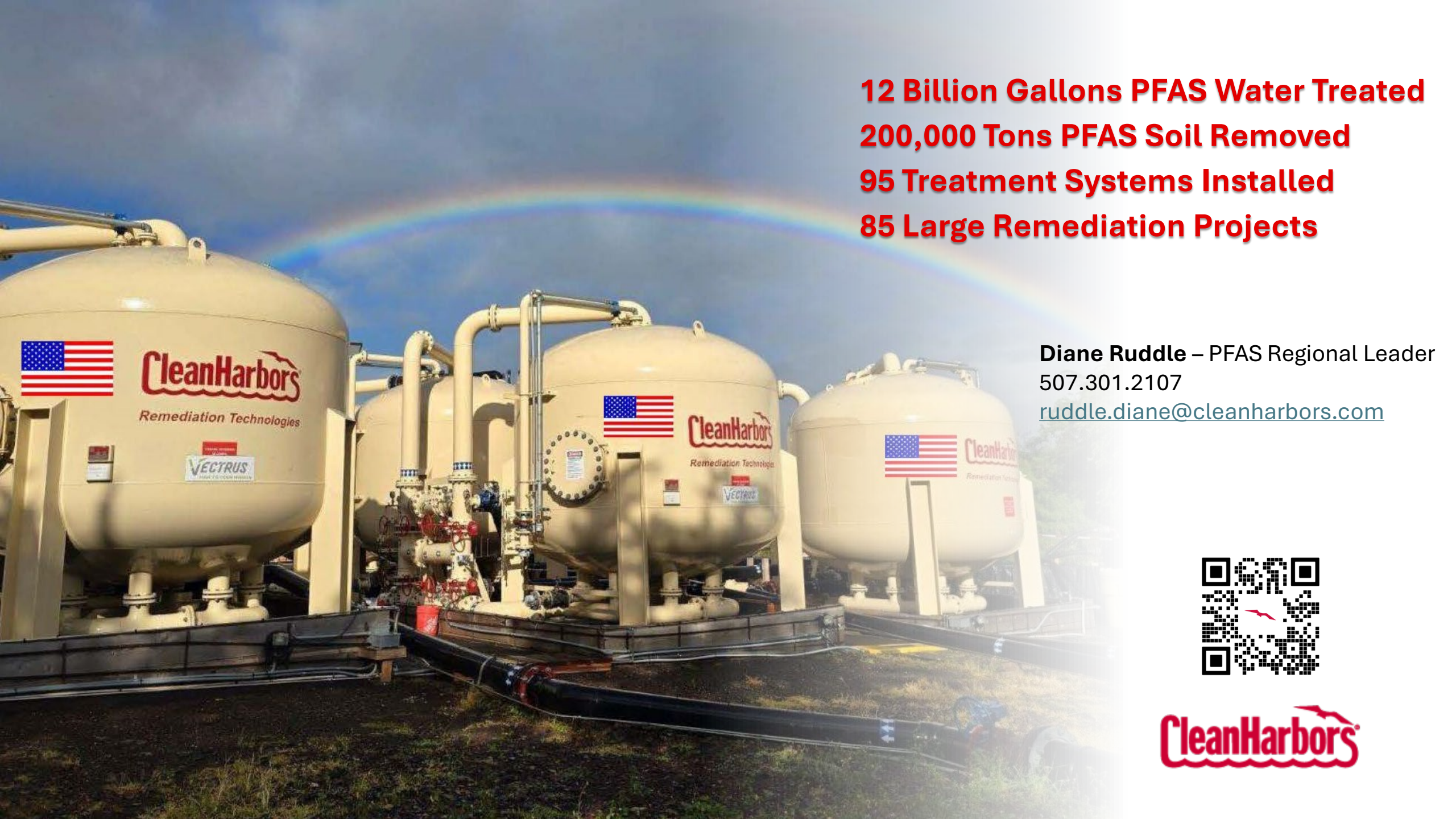
Published Sept. 23, 2025 • Updated Sept. 24, 2025

Why is that important?

- Regrettable Substitution Mitigation
- 3rd round of emissions testing completed 2024 (Prev 2021 and 2022)
- Looking for PIDs (Products of Incomplete Destruction) – Methods OTM 50 and Method 0010

Results?

- Stack gas emissions were 2 to 8 orders of magnitude lower than **any** state ambient air quality limits or guidelines.
- OTM-50 (targeted Volatiles) : No PIDs above detection limits were identified.
- Method 0010 (Large List including unknown characterizations) : No fluorinated compounds found



12 Billion Gallons PFAS Water Treated

200,000 Tons PFAS Soil Removed

95 Treatment Systems Installed

85 Large Remediation Projects

Diane Ruddle – PFAS Regional Leader
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ruddle.diane@cleanharbors.com

CleanHarbors


Thank You

Meeting Close

- Split Kitty Drawing
- PDHs available from the Omaha Post Website
  - https://www.same.org/omaha/resources/