



Air Force Civil Engineer Center



Integrating New PFAS Treatment Technologies at Hill Air Force Base

Peifen Tamashiro, P.G.
AFCEC /CZOM
8 November 2022

Battle Ready... Built Right!



Hill AFB Background



- Hill AFB is a major maintenance and support base surrounded by nine small cities in Utah.
- Installation Restoration Program (IRP) sites are managed under 18 operable units (OU)
- About to add five additional OUs for PFAS Program



- PFAS compounds are found in wastewater from a few conventional solvent sites
- PFAS Remedial Investigation is taking place currently.



PFAS Treatment Projects at Hill AFB



• PFAS Pilot Study

- Study PFAS destructive technologies for wastewater from multiple OUs.
- Plasma with and without reverse osmosis pre-treatment
- Supercritical water oxidation with reverse osmosis pre-treatment

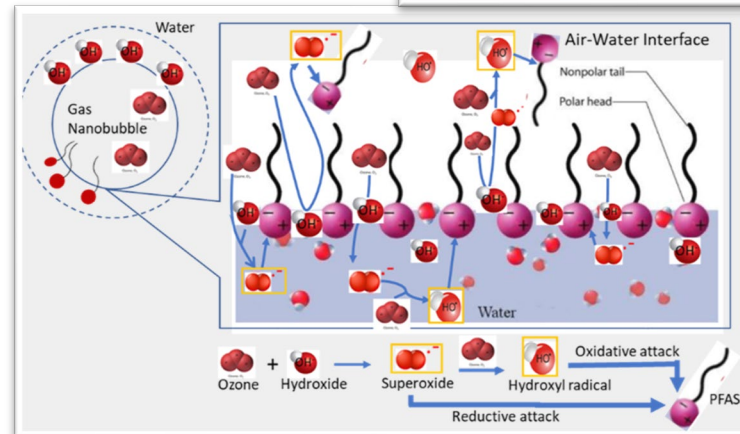
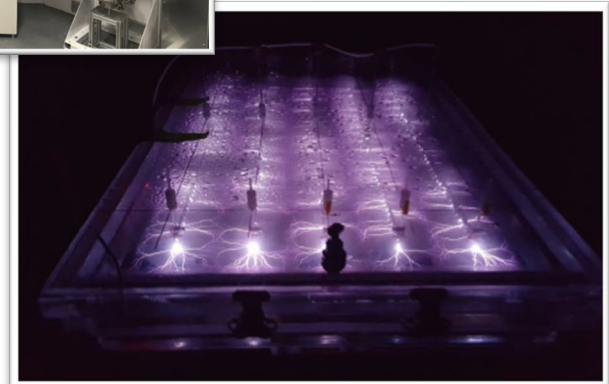


Battelle Memorial Institute
PFAS Annihilator™

• AFCEC 2021 Broad Agency Announcement Contract

- Awarded to University of Utah
- Study mineralization of PFAS in groundwater and soil
- Use ozone, nanobubbles, and venturi device
- Bench scale testing and field demonstration

DMAX Plasma
Enhanced Contact
Plasma Reactor



Destruction of PFAS using
Ozone and nanobubbles
(Andy Hong, PhD, PE,
Univ. of Utah)



AFCEC RPMs' Exposure to New Technologies



- Monthly AFCEC Environmental Speaker Series
- Other Webinars: ITRC, SERDP/ESTCP, CLU-IN, EPA, etc.
- Vendor-sponsored events and videos
- Contract proposals
- Approached by academic institutes



2019 ITRC Leadership
Tour at Hill AFB



Considerations for New Technology Integrations



- Site conditions: hydrogeology variations and compatibility with previously implemented remedial actions
- Strategic Timing:
 - Pre-remedial action vs. post-remedial action
 - Maturity of the technologies: bench-scale studies, pilot studies, and treatability studies.
- Surrounding environment: industrial, residential, or rural
- Base and community acceptance
- Regulatory involvements
- Funding/Contracting
 - Project funding/contracting
 - Other grants: ESTCP, BAA, EPA, etc.



Restoration Advisory Board Meeting



Summary: An RPM's Role in New Technology Transfer



- Maximize exposure to new technologies
- Stay connected with the technical support team
- Engage internal and external stakeholders early
- Successful or not, the data benefit us all

