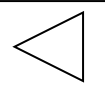


# WELCOME!

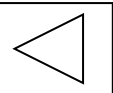
SAME OC & PEMA Joint Event

**DoD REC Region 9 and NAVFAC SW  
Division Update on PFAS**

25 February 2021



# Pledge of Allegiance





# Join SAME OC

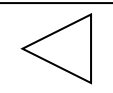


## Membership Benefits:

Sustaining member companies and public agencies, and individual members benefit from the programs, and initiatives led by the SAME Orange County. Highlights of membership at the OC Post include:

- Seminars, Workshops and Meetings for the Architecture, Engineering, and Construction / Consulting Industry Professional: meet and hear from top caliber Speakers, Presenters and Workshop Facilitators
- Engage in technical competency and professional development opportunities
- Network with representatives from other companies and government agencies

Membership in SAME includes many branches of the military as well as other federal, state, and local agencies that provide and utilize engineering, planning, architecture and construction services. Our membership also includes the majority of the Southern California's major civilian engineer, planning, architectural, and construction firms that provide professional services to federal, state, and local agencies.





# Join SAME OC

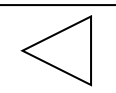


## How to Become a SAME OC Member:

Visit <https://www.same.org/Join>

To become a member or for more information, contact  
Camille Murray [camille.murray@eurofinsus.com](mailto:camille.murray@eurofinsus.com)  
Director  
Membership Chair, Young Member Committee Chair  
Eurofins TestAmerica  
17461 Derian Ave., Suite 100 Irvine, CA 92614

Dong Xu [dong.xu@errg.com](mailto:dong.xu@errg.com)  
Director  
Social Media/Communications Chair  
ERRG  
18231 Irvine Blvd., Suite 200, Tustin, CA 92618

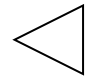


- **Celebrating 30 years**
  - **Environmental Trade Association**
  - **Goals of Education and Networking**
  - **\$40K annually for charities**
  - **Join us at [pemawest.org](http://pemawest.org)!**
-

# Thank You Sponsors!!!



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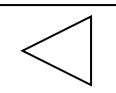




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Laboratories

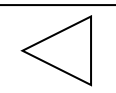




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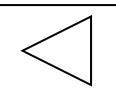
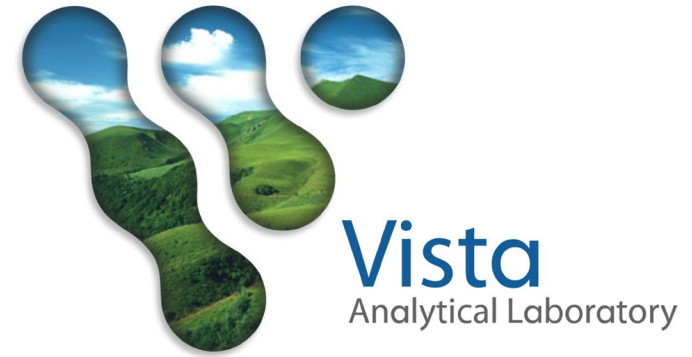
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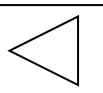


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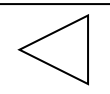
# Agenda

- Presentations
- Q&A
- Sponsor Recognition
- Closing



# Reminder for Q&A

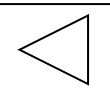
- Please click on “?” or “Show Q&A” in upper right corner
- Click “Ask a Question”
- Type question
- You can “upvote” the question that most interests you





## Jessica Palmer

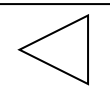
Jessica serves on the Governmental Affairs Team of Navy Region Southwest including the coordination of PFAS efforts within DoD Regional Environmental Coordinator (REC) Region 9 including CA, AZ, NV, and HI. Ms. Palmer will provide a brief overview of the DoD REC's roles and responsibilities, and then discuss PFAS activities and updates in REC Region 9, with a focus on recent work in California.





## **Derral Van Winkle, P.G.**

Derral is the NAVFAC Southwest Environmental Restoration Program Product Line Leader. In this role Mr. Van Winkle oversees the cleanup of all Navy legacy release sites throughout the Navy Region Southwest area of responsibility including California, Nevada, and Arizona. Mr. Van Winkle will discuss the Navy's recent efforts to investigate and address PFAS releases to the environment at various installations





NAVFAC SOUTHWEST

***Department of Navy Response to Per- and  
Polyfluoroalkyl Substances (PFAS)  
Joint Meeting: Society of American Military Engineers  
(SAME) Orange County Post/Professional Environmental  
Management Professionals (PEMA)***

***February 2021***

**Jessica Palmer  
Regional Environmental Coordinator (REC)  
Navy Region Southwest**

**Derral Van Winkle, PG  
Environmental Restoration, PLL  
NAVFAC Southwest**



# Today's Presentation Agenda



- **DoD's Big Picture on PFAS**
- **The DoD PFAS Task Force**
- **2020 DoD Policies**
- **FY2020 & FY2021 NDAA**
- **Restoration Program PFAS Update**



# The Department's Big Picture on PFAS



- **PFAS is a national issue that needs national solutions. DoD is committed to being part of that solution and is addressing PFAS across our installations in a holistic, proactive, coordinated, and transparent manner.**
- **DoD is looking at PFAS from both a national and an international standpoint and issuing policies to cover our installations across the globe.**
- **DoD is working with State and Local Regulatory Agencies, academia, and industry, and investing heavily in R&D towards PFAS characterization, toxicity, and treatment, as well as the development of fluorine-free firefighting agents.**





# DoD's PFAS Task Force



- On July 23, 2019, then Secretary of Defense established the DoD PFAS Task Force
- The PFAS Task Force has six focus areas:
  1. Health aspects
  2. Cleanup standards and performance
  3. Finding/funding an effective substitute firefighting foam without PFAS
  4. Science-supported standards for exposure and cleanup
  5. Interagency coordination
  6. Public/Congress perceptions of DoD's efforts
- DoD's PFAS Website:  
<https://www.defense.gov/Explore/Spotlight/pfas/>



# Our People Are Our Priority: Addressing PFOS and PFOA in Drinking Water From DoD Activities



- **Based on the work DoD has already done, we can confidently say no one is drinking water above the Environmental Protection Agency's lifetime health advisory level where DoD is the known source.**
- **Since 2013 DOD has tested all 524 DoD-operated drinking water systems (worldwide) for PFAS. 24 of those tested above EPA's health advisory and DOD took quick action at these 24 locations to reduce levels below the health advisory (shutting wells down, providing bottled water, adding treatment). That testing occurred as a result of requirements in both UCMR 3 and DoD Policy. The majority of our systems were tested in the 2015-2018 time period.**
- **We know the landscape has changed since that time, and DoD again pushed forward proactively on this front in 2020.**



# DoD PFAS Policies Issued in 2020



- **13 January 2020 ASD Memo: Aqueous Film Forming Foam Usage and Spill Reporting**

- Requires annual reporting of all installation AFFF use/spillage to ASD; 24-hr notification above 10 gal concentrate/300 gal mixed foam

- **02 March 2020 ASD Memo: Per- and Polyfluoroalkyl Substances Sampling of Department of Defense Drinking**

- Requires DoD DW Systems, where DoD is the purveyor, to sample for PFAS (18 PFAS constituents using method 537.1) by the end of 2020 and describes follow-on sampling requirements.

- DoD collaborated with the SWRCB, and all sampling conducted under this policy is/will be available on the SWRCB PFAS Website:

- <https://www.waterboards.ca.gov/pfas/>

- **23 July 2020 ASD Memo: Monitoring of Per- and Polyfluoroalkyl Substances Sampling for Installations with Non-Department of Defense Drinking Water Systems**

- Requires installations to reach out to purveyors and obtain PFAS sampling status and results and/or sample drinking water received.



# The Department's Past and Present Use of PFAS



- **A major consideration as DoD moves forward in our installation assessments is our past and present use of PFAS. We are looking at all suspected locations of PFAS releases, including applicable disposal areas, chrome plating shops, and air fields and other locations where Aqueous Film Forming Foam, or AFFF, was used for training and/or emergency fire fighting.**
- **DoD has taken major steps in relation to AFFF. We no longer use AFFF for land-based testing, training, or maintenance. If AFFF is used on one of our installations, the Department treats that use as a spill and responds accordingly to limit environmental effects.**
- **The next few slides highlight PFAS-related provisions relevant to DoD incorporated into federal law via the National Defense Authorization Act for Fiscal Years 2020 and 2021 (FY2020 NDAA and FY2021 NDAA). The NDAA authorizes FY appropriations and sets forth policies for DOD programs and activities.**



# PFAS – FY2020 NDAA Conference Bill



## –Section 239. Use of funds for Strategic Environmental Research Program, Environmental Security Technical Certification Program, and Operational Energy Capability Improvement

- Requires at least \$10 million for non-fluorine based firefighting foams in addition to other efforts.

## –Section 316. Modification of Department of Defense environmental restoration authorities to include Federal Government facilities used by National Guard

- Gives National Guard access to DERA for PFOS/PFOA remediation. No sunset.

## –Section 321. Transfer authority for funding of study and assessment on health implications of per- and polyfluoroalkyl substances contamination in drinking water by Agency for Toxic Substances and Disease Registry

- Extends transfer authority for ATSDR PFAS study to FY2021.

# PFAS – FY2020 NDAA Conference Bill



## –Section 322. Replacement of fluorinated aqueous film forming foam with fluorine-free firefighting agent

- Requires Navy to publish MilSpec for fluorine-free firefighting foam by 31 January 2023. Foam must be available to use by 1 October 2023, with full phase-out by 1 October 2024. Secretary of Defense is granted waiver authority. Also requires report on transition plan by 31 January 2023.

## –Section 323. Prohibition of uncontrolled release of fluorinated aqueous film-forming foam at military installations

- Prohibits uncontrolled release of fluorinated AFFF unless for actual emergency response or for testing if complete containment/capture/disposal measures in place

## –Section 324. Prohibition on use of fluorinated aqueous film forming foam for training exercises

## –Section 329. Prohibition on Perfluoroalkyl Substances and Polyfluoroalkyl Substances in Meals Ready-to-Eat Food Packaging

## –Section 330. Disposal of materials containing per- and polyfluoroalkyl substances or aqueous film-forming foam

- Sets guidelines for incineration of AFFF with PFAS

# PFAS – FY2020 NDAA Conference Bill



## **–Section 331. Agreements to share monitoring data relating to PFAS and other contaminants of concern**

- Requires agreements with municipalities or municipal water utilities to share PFAS data, and requires publicly accessible website.

## **–Section 332. Cooperative agreements with States to address contamination by perfluoroalkyl and polyfluoroalkyl substances**

- Encourages finalization of cooperative agreements upon request from the governor of a State if there is suspected contamination from PFAS from DoD activities.

## **–Sections 341-345. Relating to treatment of contaminated water near military installations**

- Allows Services to provide alternate water sources or to treat water with PFAS at or above designated levels if the water is used for agricultural purposes leading to products destined for human consumption; Allows Air Force to acquire property with PFOS/PFOA impacts; Requires submission of a remediation plan for cleanup of water at or adjacent to a military installation with PFOA or PFOS impacts.

## **–Section 707. Provision of blood testing for firefighters of Department of Defense to determine exposure to PFAS**

# PFAS – FY2021 NDAA Conference Bill

- Section 314. Modification of Authority for PFOS/PFOA Environmental Restoration Projects for the National Guard**
- Section 318. Reporting of AFFF Uses and Spills**
  - Requires DASD(Env) to report usage or spills of AFFF to the HASC and SASC within 48 hours of notification.
  - Requires an “action plan” within 60 days of a use or spill describing actions taken to cleanup the spill and any coordination with regulators.
- Section 330. Cash prizes for PFAS-free Firefighting Agents**
  - ASD(S) and SERDP may carry out a program to award cash prizes for the development of a PFAS-free firefighting agent.
- Section 331. Survey of Firefighting Technologies**
  - Requires SecDef to conduct a survey of relevant technologies, other than firefighting agent solutions, and provide a briefing within one year.
- Section 332. Establishment of an Interagency Body on Research Related to PFAS**
  - Provide for interagency coordination and make publicly available a strategic plan for Federal support for PFAS research and development





# Sec 332. Interagency Body Participants



## **INTERAGENCY BODY PARTICIPANT LIST:**

- (1) the Environmental Protection Agency;
- (2) the National Institute of Environmental Health Sciences;
- (3) the Agency for Toxic Substances and Disease Registry;
- (4) the National Science Foundation;
- (5) the Department of Defense;
- (6) the National Institutes of Health;
- (7) the National Institute of Standards and Technology;
- (8) the National Oceanic and Atmospheric Administration;
- (9) the Department of the Interior;
- (10) the Department of Transportation;
- (11) the Department of Homeland Security;
- (12) the National Aeronautics and Space Administration;
- (13) the National Toxicology Program;
- (14) the Department of Agriculture;
- (15) the Geological Survey;
- (16) the Department of Commerce;
- (17) the Department of Energy;
- (18) the Office of Information and Regulatory Affairs;
- (19) the Office of Management and Budget; and
- (20) any such other Federal department or agency as the Director of the Office of Science and Technology Policy considers appropriate.

**CONSULTATION.**—In developing the strategic plan, the interagency working group shall consult with

- States,
- Tribes,
- Territories,
- local governments,
- appropriate industries,
- academic institutions,
- nongovernmental organizations with expertise in PFAS research and development, treatment, management, and alternative development.

# PFAS – FY2021 NDAA Conference Bill



## –Section 333. Restriction on DoD Procurement of Certain Items Containing PFAS

- Items include: nonstick cookware or cooking utensils and upholstered furniture, carpets, and rugs that have been treated with stain-resistant coatings.
- Effective date: April 1, 2023.

## –Section 334. Research and Development of Alternatives to AFFF

- SecDef working through the National Institute of Standards and Technology shall award grants and carry out other activities to promote the research and development of additional alternatives to AFFF. (Report to Congress required.)

## –Section 335. Notification to Agricultural Operations Located in Areas Impacted by PFAS from DoD Activities.

- Requires notification to any agricultural operation within one mile down gradient of a DoD or Guard installation when PFAS has been detected in groundwater; has been hydrologically linked to an agricultural or drinking water source; and is from DoD activities.
- Report to Congress within 90 days with locations of Ag Operations and Installations and levels of PFOS, PFOA, and PFBS detected in groundwater.



# DON Cleanup Approach on Our Installations



- 1) Identify source(s) of a known or suspected release**
- 2) Identify potential for exposure through drinking water**
- 3) If potential for exposure exists, DON priority is to cut off drinking water exposure**
- 4) Prioritize sites and follow the DODs Environmental Restoration process†**
  - a. to fully investigate the release, and
  - b. determine the appropriate cleanup actions based on risk

† Reference: Defense Environmental Restoration Program, 10 U.S.C. Section 2701



# Addressing Complete Pathways for Drinking Water off DON Installations



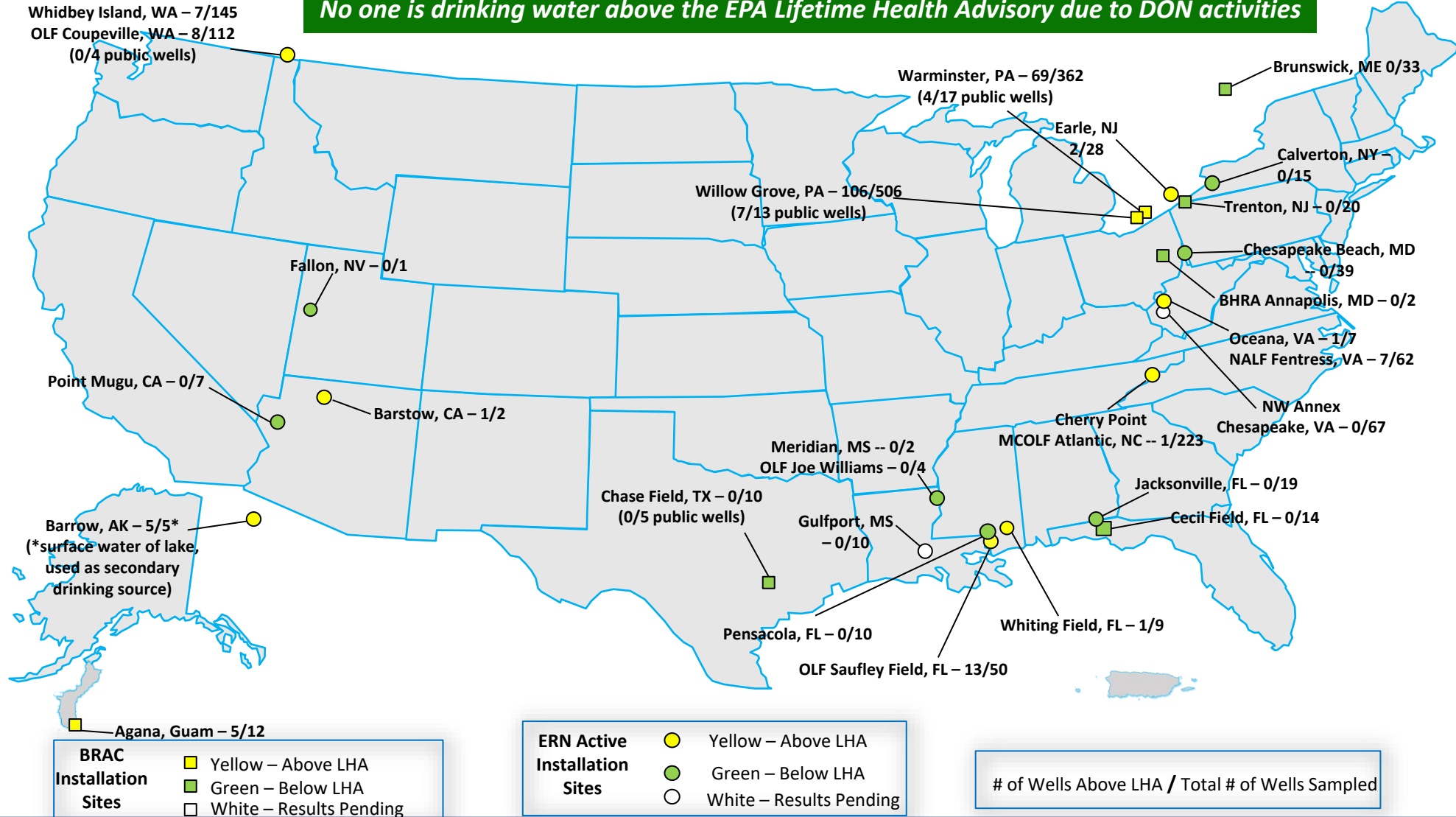
- **Where DON suspects a release may have migrated off-base, we have:**
  - Identified all potentially affected drinking water wells
  - Sampled those private drinking water wells
- **Where sampling results for PFOS and PFOA greater than Environmental Protection Agency lifetime Health Advisory (HA)**
  - First priority for DON - work with the Communities and private individuals to quickly and aggressively break the human exposure pathway via drinking water
  - Provide bottled water
  - Move the location (area of concern or interest) into the complete Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process
  - PFOS – Perfluorooctanesulfonic acid
  - PFOA – Perfluorooctanoic acid



# DON PFOA/PFOS Off-Installation Drinking Water Sampling Locations

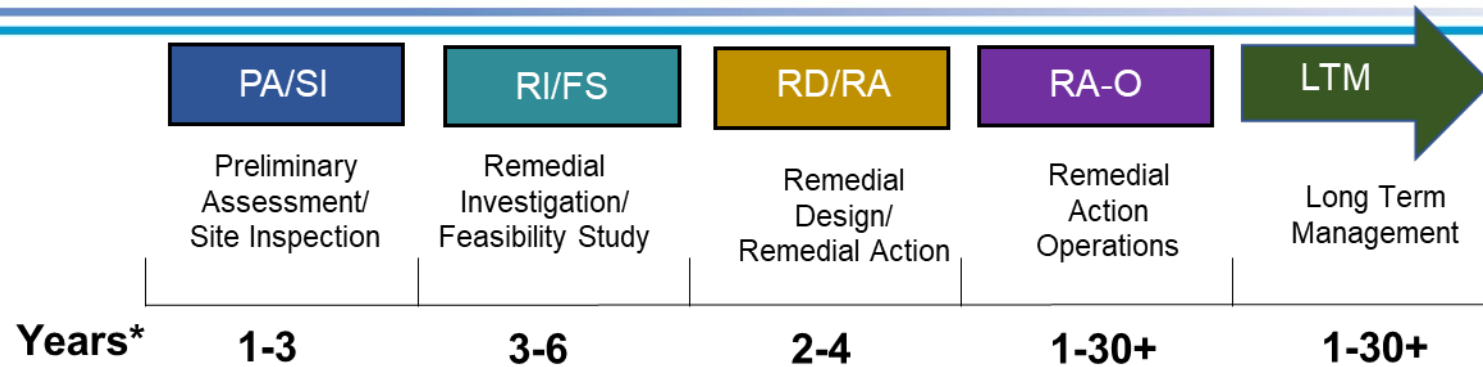


**No one is drinking water above the EPA Lifetime Health Advisory due to DON activities**





# CERCLA Process



## • CERCLA Process

### – Preliminary Assessment/Site Inspection – Identify releases

Use DoD’s Screening Levels to determine whether to continue to a Remedial Investigation

### – Remedial Investigation/Feasibility Study – Investigate and characterize the release and evaluate remedy alternatives

- Perform Risk Assessment to determine if there is an unacceptable risk to human health or the environment
- Evaluate ARARs – Once it is determined that remedial action is necessary, DoD will analyze state cleanup standards under the CERCLA ARARs process.

### – Develop Proposed Plan and Decision Document

### – Remedial Action/Remedial Operation - Implement and operate remedy

### – Long Term Management - Monitoring and Five Year Reviews

## • DON prioritizes sites by risk level, but other factors may be considered

\*Estimated average timeframe to address installation restoration sites



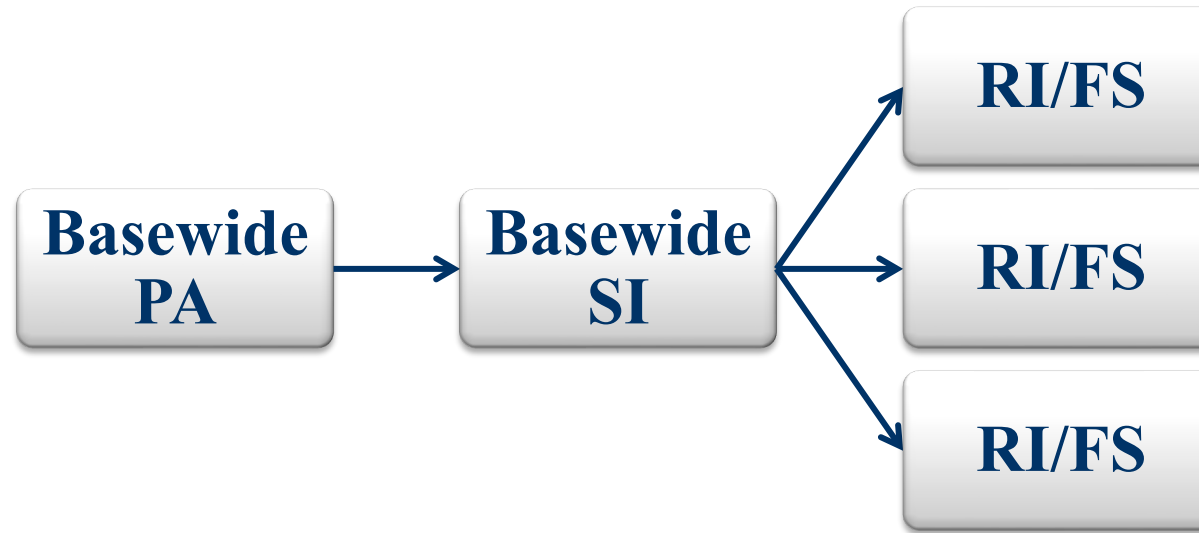
# NAVFAC SW Installation PFAS Investigation Status



Activity	PA Status	SI Status	RI Status	Comments
AZUSA CA NCCOSC MORRIS DA	Underway	Underway	Planned	PA and SI efforts are combined.
BARSTOW CA MCLB	Finalized	Finalized	Underway	
CAMP PENDLETON CA MCB	Underway	Underway	Planned	PA and SI efforts are combined.
CHINA LAKE CA NAWCWPNSDIV	Finalized	Underway	Planned	
EL CENTRO CA NAF	Finalized	Underway	Planned	
FALLON NV NAS	Finalized	Underway	Planned	
IMPERIAL BEACH CA NAVALF	Finalized	Underway	Planned	
LEMOORE CA NAS	Finalized	Underway	Planned	
MIRAMAR CA MCAS	Finalized	Underway	Planned	
NAS PT MUGU CA NAVAIRWARC	Underway	Underway	Planned	PA and SI efforts are combined.
NAVBASE CORONADO	Finalized	Underway	Planned	
NAVBASE SAN DIEGO	Finalized	Underway	Planned	
NAVCOMTELSTA STOCKTON	Finalized	Underway	Planned	
PORT HUENEME CA NFELC	Underway	Underway	Planned	PA and SI efforts are combined.
SAN DIEGO CA AUXLNDFLD	Finalized	Underway	Planned	
SAN DIEGO CA FASWTC PAC	Finalized	Underway	Planned	
SAN DIEGO CA NISE-WEST	Finalized	Underway	Planned	
SAN NICOLAS IS CA OLF	Underway	Underway	Planned	PA and SI efforts are combined.
SEAL BEACH CA WPNSUPFAC	Underway	Planned	Planned	
SPAWARSSYSCEN PACIFIC SD	Underway	Planned	Planned	
TWENTYNINE PALMS CA MAGCC	Finalized	Underway	TBD	RI may not be required.
YUMA AZ MCAS	Finalized	Finalized	Underway	



# NAVFAC SW PFAS Investigation Process



**PA – Preliminary Assessment**

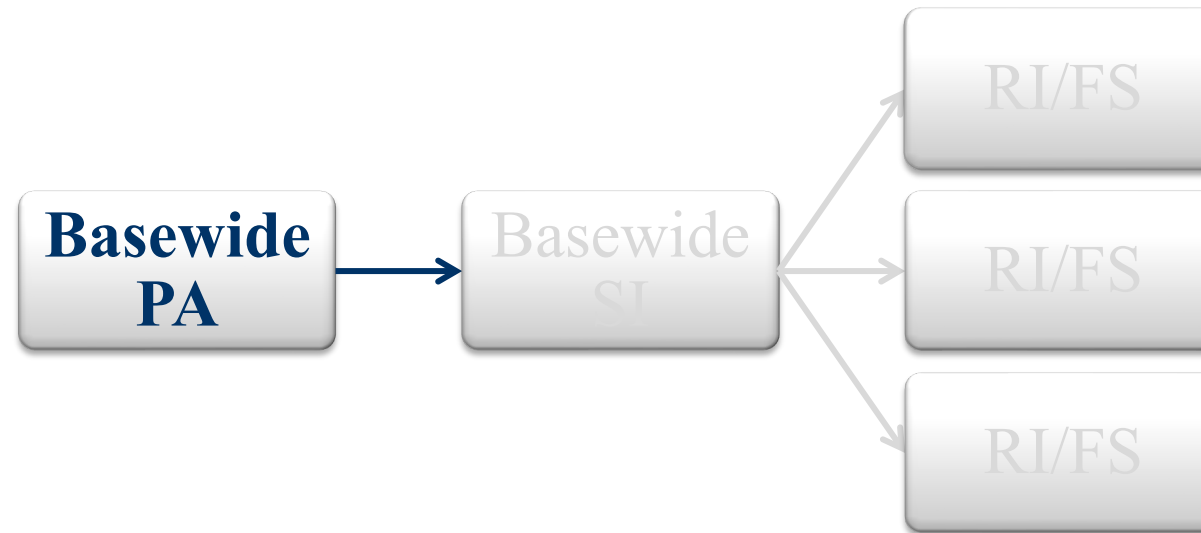
**SI – Site Inspection**

**RI/FS – Remedial Investigation/Feasibility Study**





# NAVFAC SW PFAS Investigation Process



## PA

- **Basewide Preliminary Assessment (PA) historical review and evaluation**
- **Areas of Interest (AOI) identification**
- **Internal screening of AOIs based on Navy policy and guidance**
- **PA submittal to agencies seeking review and concurrence**



# NAVFAC SW PFAS Investigation Process



## Basewide PA

**Types of Areas of Interest (AOIs) moving forward where agreement with regulatory agencies is straightforward**

- AFFF training, firefighting, use, release areas
- AFFF storage areas – large areas and transfer of materials only
- Fire Stations (that utilize AFFF)
- Hangars (AFFF fire suppression systems)
- On-base crash sites – where AFFF used in response
- Plating operations and waste disposal areas



# NAVFAC SW PFAS Investigation Process



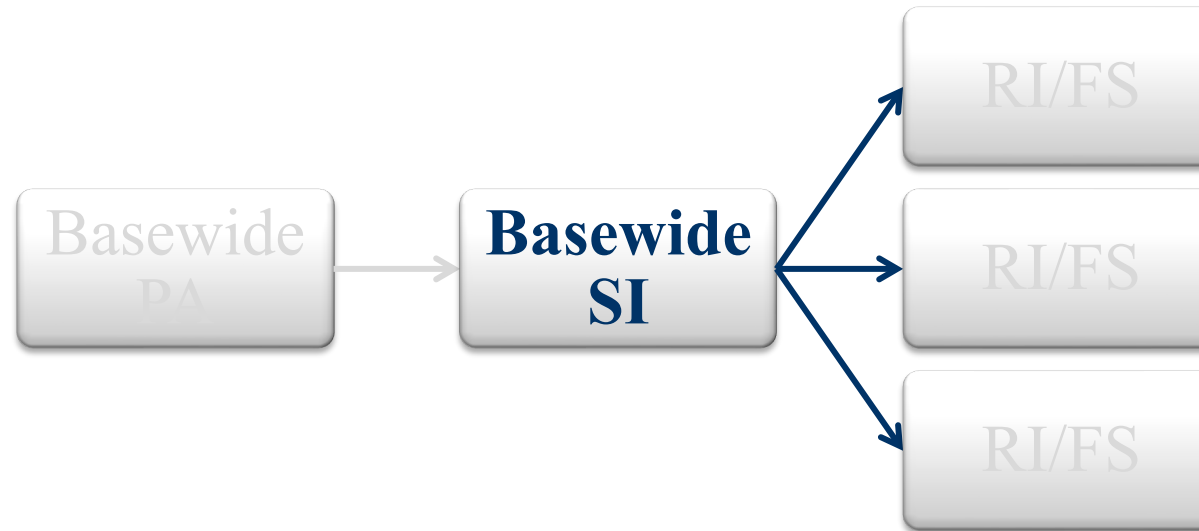
## Basewide PA

**Types of Areas of Interest (AOIs) not moving forward into SI where agreement with regulatory agencies is less straightforward; rely on site-specific information**

- Landfills / debris fields
- Municipal wastewater treatment plants (and affiliated drainage, treatment, disposal and storage areas)
- Industrial wastewater treatment facilities
- Along wastewater and industrial waste lines
- Stormwater drainage infrastructure
- Pesticide application and disposal areas
- Paint waste and disposal areas
- Photographic processing waste and disposal areas
- Hydraulic fluids



# NAVFAC SW PFAS Investigation Process



## SI

- **Basewide Site Inspection (SI) work plan development – includes all AOIs identified as “yes” in the PA summary table**
- **Some AOIs screened during work plan development and prior to sampling**
- **Field investigation / sampling**
- **Screening level risk assessment**
- **Basewide SI report**
- **Recommendation of sites moving to site-specific RIs**
- **Report submittal seeking regulatory review and concurrence**



# NAVFAC SW PFAS Investigation Process



## Basewide SI

### Screening Level Human Health Risk Assessment

**Attachment: Risk Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater or Soil Using EPA's RSL Calculator**

Chemical	Carcinogenic Slope Factor - Oral (SF) (mg/kg-day) <sup>-1</sup>	Non-Carcinogenic Reference Dose (RfD) (mg/kg-day)	Residential Scenario Screening Levels Calculated Using EPA RSL Calculator								Industrial/Commercial Composite Worker Screening Levels Calculated Using EPA RSL Calculator			
			Tap Water (µg/L or ppb)				Soil (mg/kg or ppm)				Soil (mg/kg or ppm)			
			HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04	HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04	HQ = 0.1	HQ = 1.0	ILCR = 1E-06	ILCR = 1E-04
PFOS	NA	2.00E-05	0.040	0.40	NA	NA	0.13	1.3	NA	NA	1.6	16	NA	NA
PFOA	7.00E-02	2.00E-05	0.040	0.40	1.1	111	0.13	1.3	7.8	775	1.6	16	33	3,280
PFBS	NA	2.00E-02	40	400	NA	NA	130	1300	NA	NA	1600	16000	NA	NA

HQ=Hazard Quotient

ILCR=Incremental Lifetime Cancer Risk

NA=Not available/applicable

- The table represents screening levels based on residential and industrial/commercial worker receptor scenarios for either direct ingestion of groundwater (residential scenario only) or incidental ingestion of contaminated soil (both residential and composite worker scenarios).
- All values were calculated using slope factors or reference doses for PFOS and PFOA published by EPA Office of Water in support of the LHA, and default exposure assumptions for each potential receptor scenario, contained in EPA's RSL Calculator on April 6, 2018.
- Peer reviewed toxicity values considered valid for risk assessment exist for PFBS, and the screening levels may be found in EPA's RSL table or EPA's RSL calculator used to develop them.
- Other potential receptor scenarios ( e.g., recreational user, site trespasser, construction worker) are not included in the above table, but could be relevant receptors at a site potentially contaminated with PFOS, PFOA and/or PFBS. These receptors, and their associated exposure scenarios, should be further considered in the scoping phase and completion of the Baseline Human Health Risk Assessment typically completed during an RI.
- The shaded values represent conservative screening levels for PFOS and PFOA in groundwater or soil that when exceeded should be considered a contaminant of potential concern in the risk assessment process and calculations of site-specific risk posed.



# NAVFAC SW PFAS Investigation Process



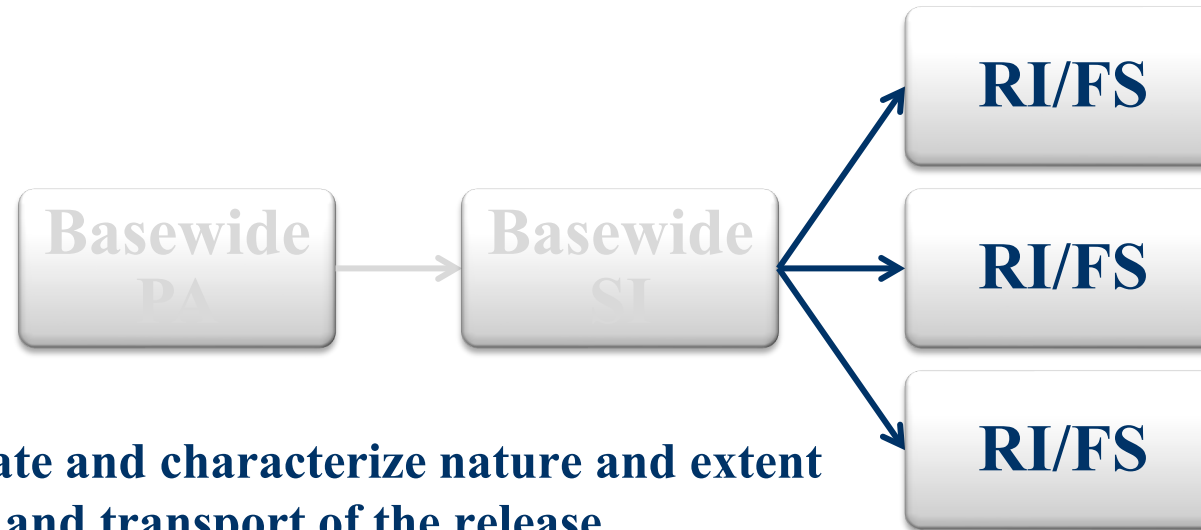
## Basewide SI

### Screening Level **Ecological** Risk Assessment (SLERA)

- **No established screening values**
- **Current approach –**
  - **Utilization of criteria from 2 reports: (SERDP, 2020a) and (SERDP, 2020b) [detailed references included at end of presentation]**
  - **Marine surface water values available**
  - **Data gap for marine invertebrates**
  - **For most other eco receptors, screening values will be driven by wildlife bioaccumulation; so currently in the SAP utilizing the calculated generic surface water and sediment values (SERDP, 2020b) as project screening levels to establish detection limits to enable the performance of a SLERA**
- **All values come with caveat that literature will be reviewed for more current and applicable toxicity criteria before performing the risk assessment**



# NAVFAC SW PFAS Investigation Process



## RI

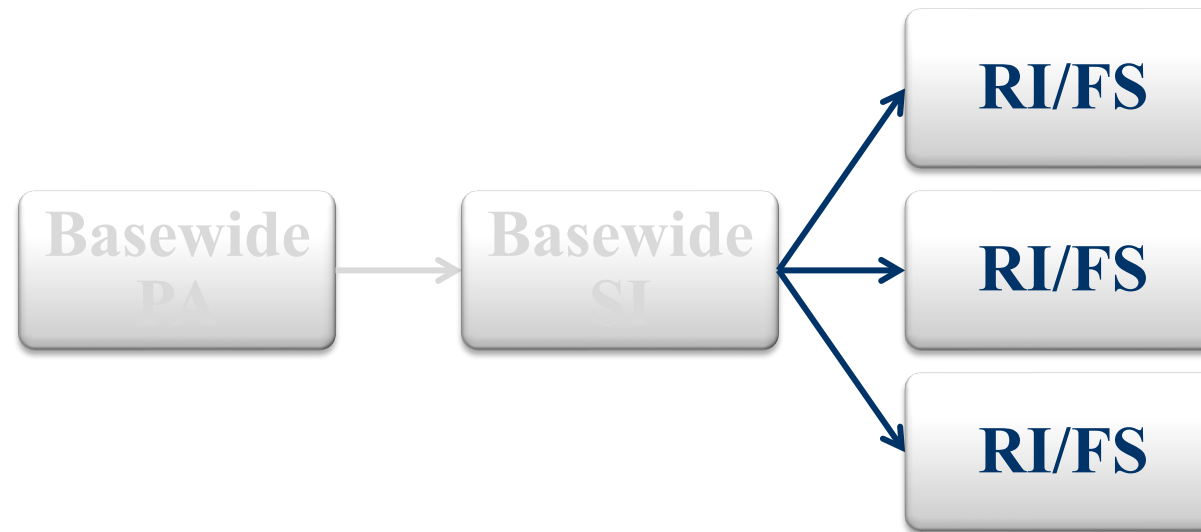
- Investigate and characterize nature and extent and fate and transport of the release
- Perform baseline risk assessment to determine if unacceptable risk to human health or the environment exists

## FS

- Screen and develop remedial alternatives for each site that poses unacceptable risk
- Evaluate each remedial alternative through CERCLA nine criteria
- Develop remedial objectives and cleanup goals
- Evaluate Applicable or Relevant and Appropriate Requirements (ARARs)



# NAVFAC SW PFAS Investigation Process

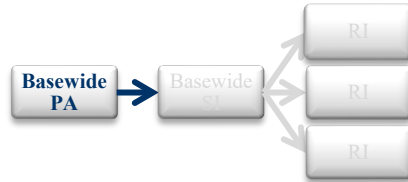


- **AOIs that move to the RI become unique Sites and investigations**
- **One-to-one relationship of investigation/report to each site**
- **Installations engage with the community through:**
  - **Restoration Advisory Boards**
  - **Public meetings**
  - **Distribution of fact sheets**



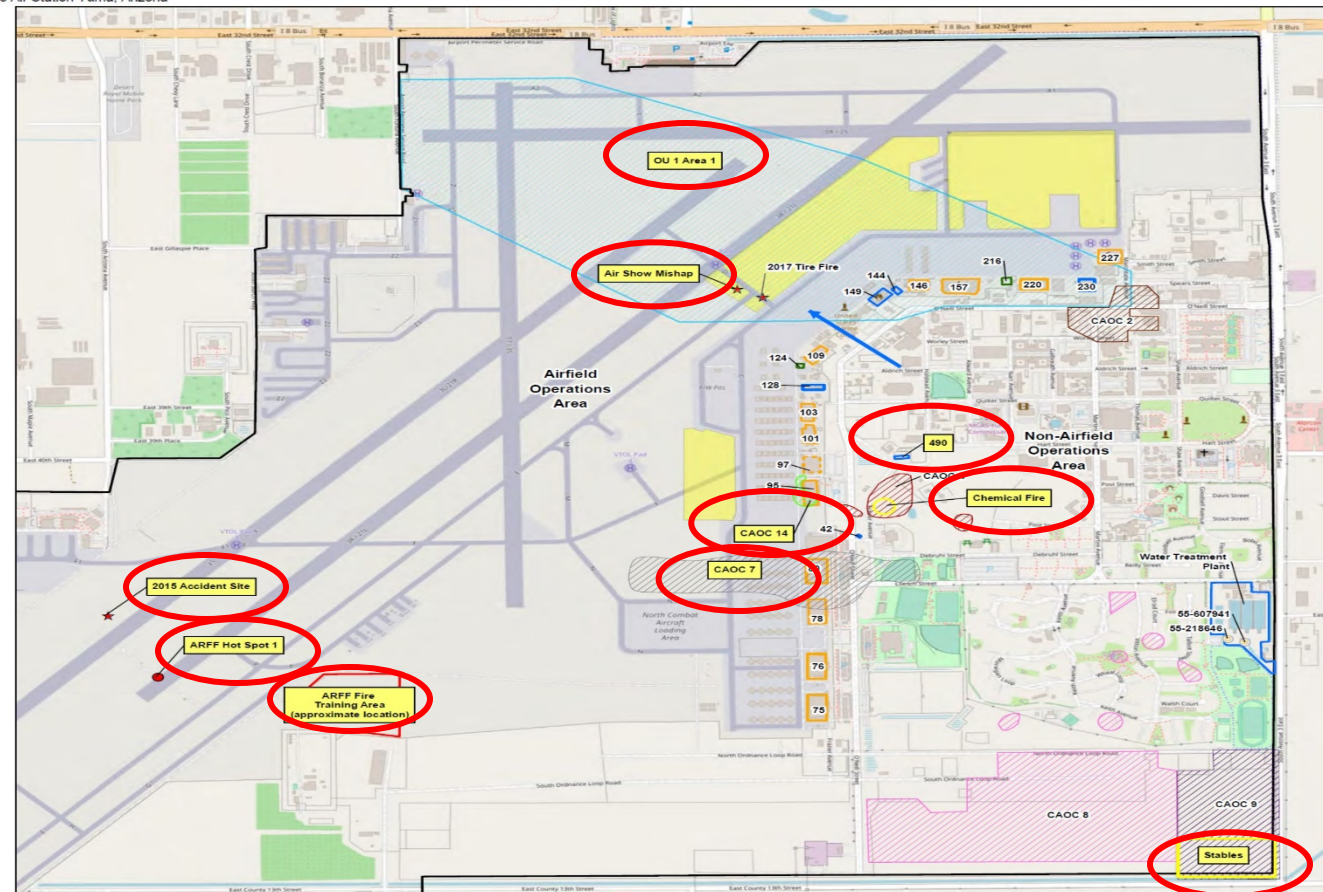


# NAVFAC SW PFAS Investigation Process



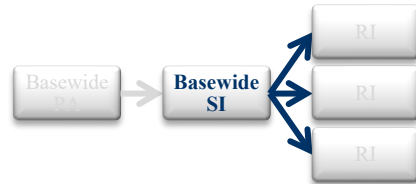
Activity	PA Status	SI Status	RI Status
YUMA AZ MCAS	Finalized	Finalized	Underway

Site Inspection Report for Per- and Polyfluoroalkyl Substances  
Marine Corps Air Station Yuma, Arizona



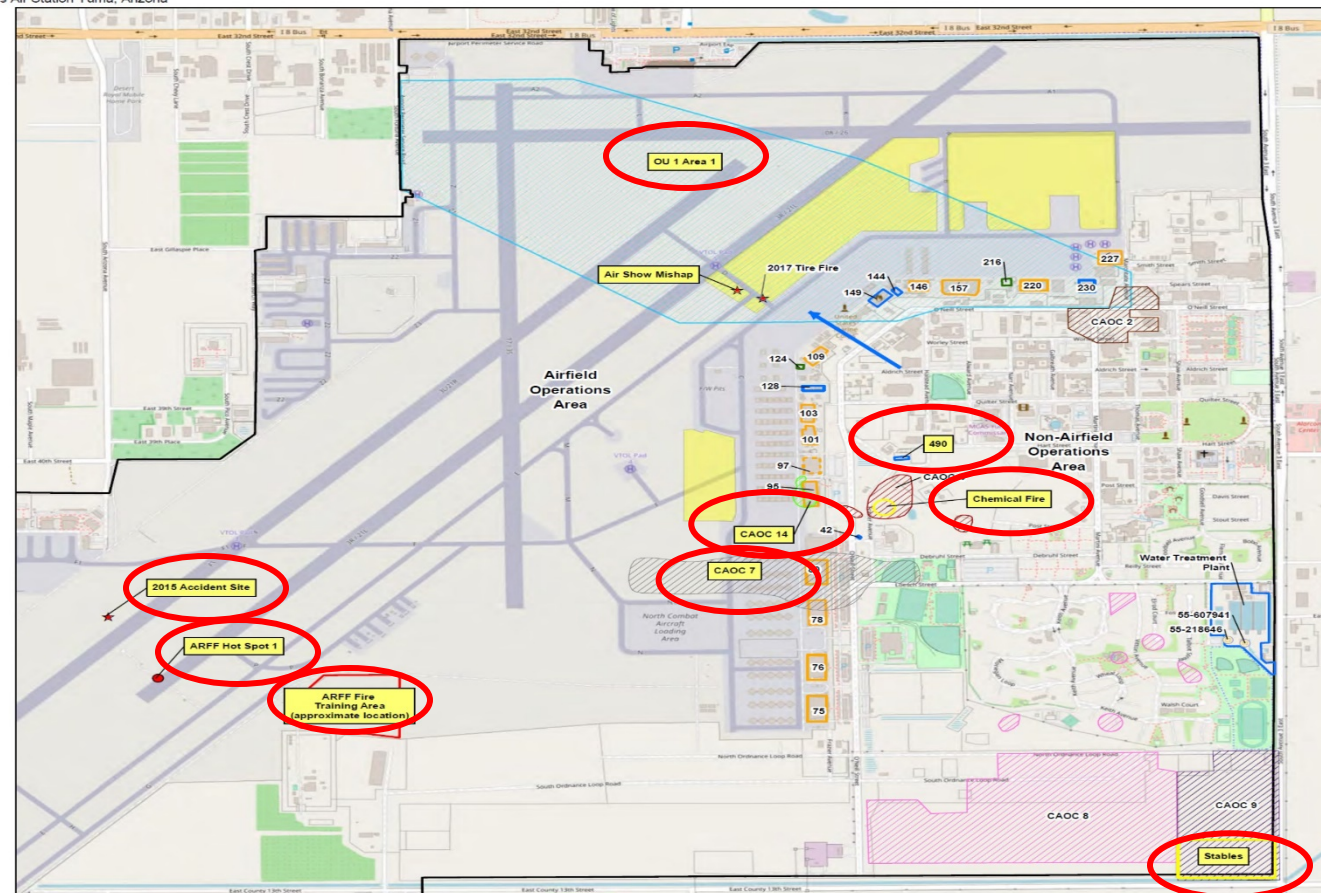


# NAVFAC SW PFAS Investigation Process



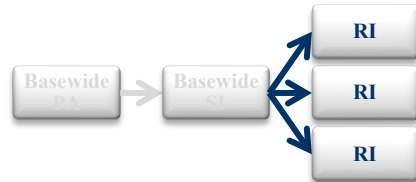
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YUMA AZ MCAS	Finalized	Finalized	Underway

Site Inspection Report for Per- and Polyfluoroalkyl Substances  
Marine Corps Air Station Yuma, Arizona

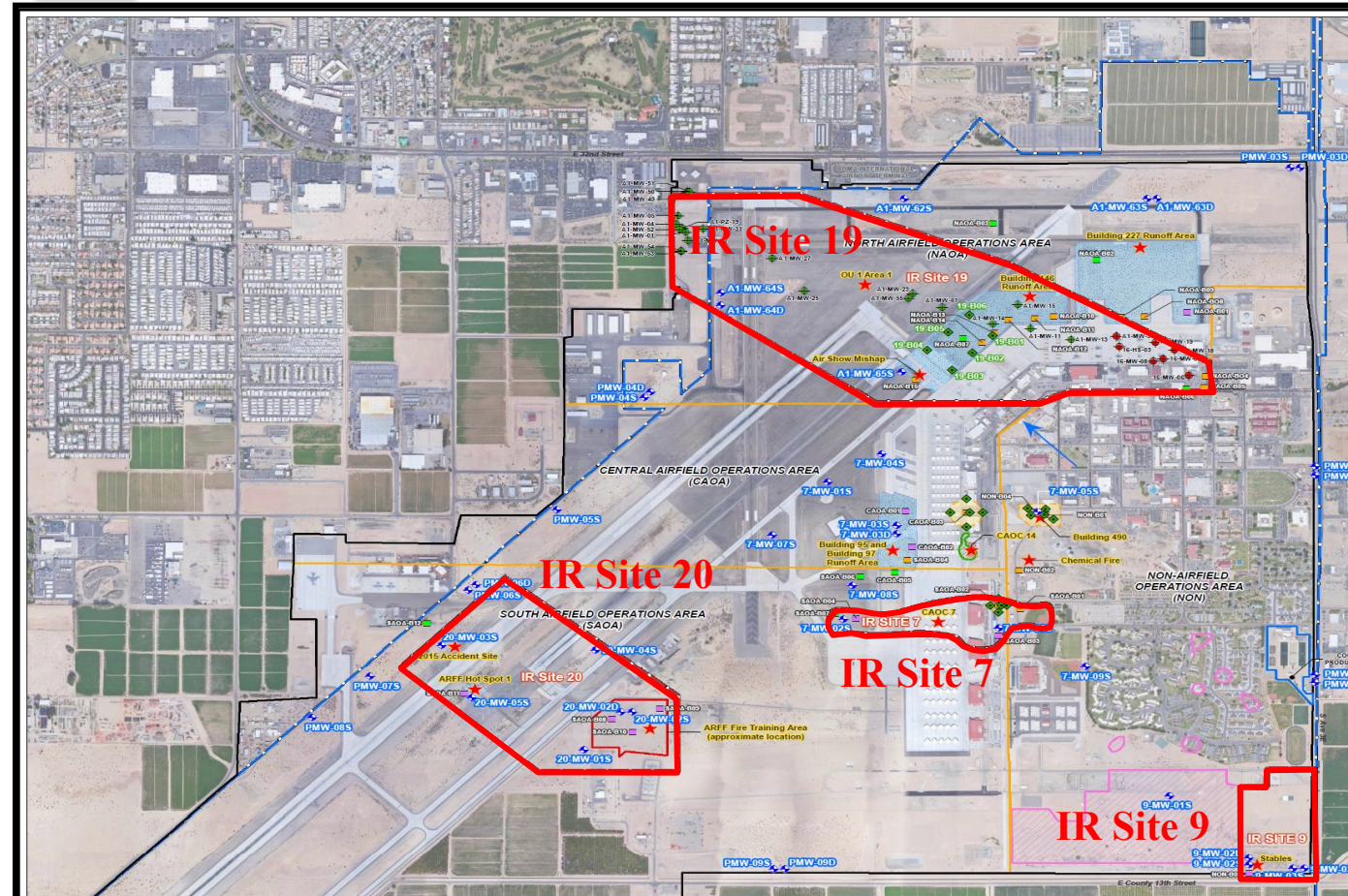




# NAVFAC SW PFAS Investigation Process

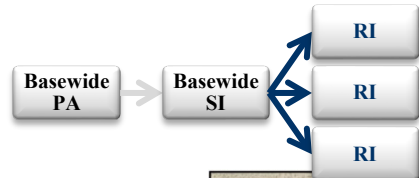


Activity	PA Status	SI Status	RI Status
YUMA AZ MCAS	Finalized	Finalized	Underway

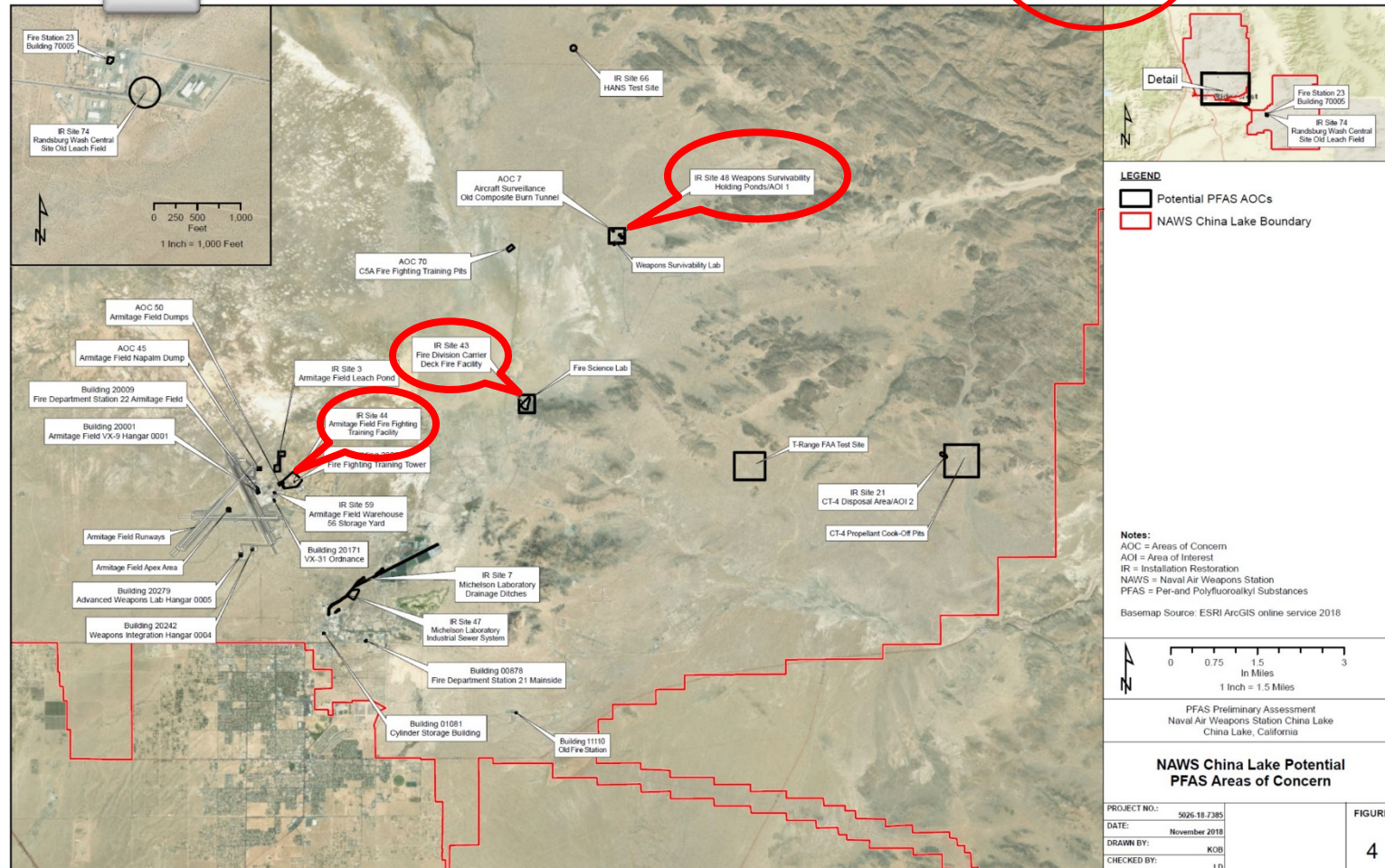




# NAVFAC SW PFAS Investigation Process



Activity	PA Status	SI Status	RI Status
CHINA LAKE CA NAWCWPNSDIV	Finalized	Underway	Planned





# Summary



- **DON's priority is to address PFOS/PFOA to protect personnel living and working on our installations and the surrounding communities**
- **2020/2021 NDAA established additional requirements for DoD implementation**
- **DON has taken proactive steps to ensure safe drinking water for our installations**
- **Initiated removal of AFFF with PFOS and PFOA from the supply chain**
- **We are actively addressing DON's cleanup responsibility**

**Addressing PFAS requires a national solution**





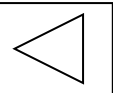
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- **SERDP 2020a: Conder, J., J. Arblaster, E. Larson, J. Brown, and C. Higgins. 2020. Guidance for Assessing the Ecological Risks of PFASs to Threatened and Endangered Species at Aqueous Film Forming Foam-Impacted Sites. Department of Defense Strategic Environmental Research and Development Program (SERDP) Project ER18-1614. January.**
- **SERDP, 2020b, Divine, C., J. Zodrow, M. Frenchmeyer, K. Dally, E. Osborn, and P. Anderson. 2020. Approach for Assessing PFAS Risk to Threatened and Endangered Species. Department of Defense Strategic Environmental Research and Development Program (SERDP) Project ER18-1653. March.**



# Q&A

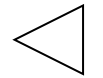




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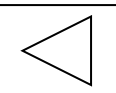




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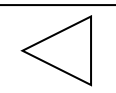




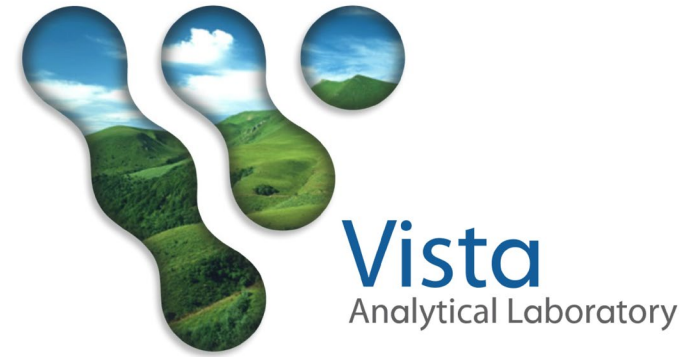
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