



Naval Air Station Whidbey Island Restoration Advisory Board Meeting September 30, 2025

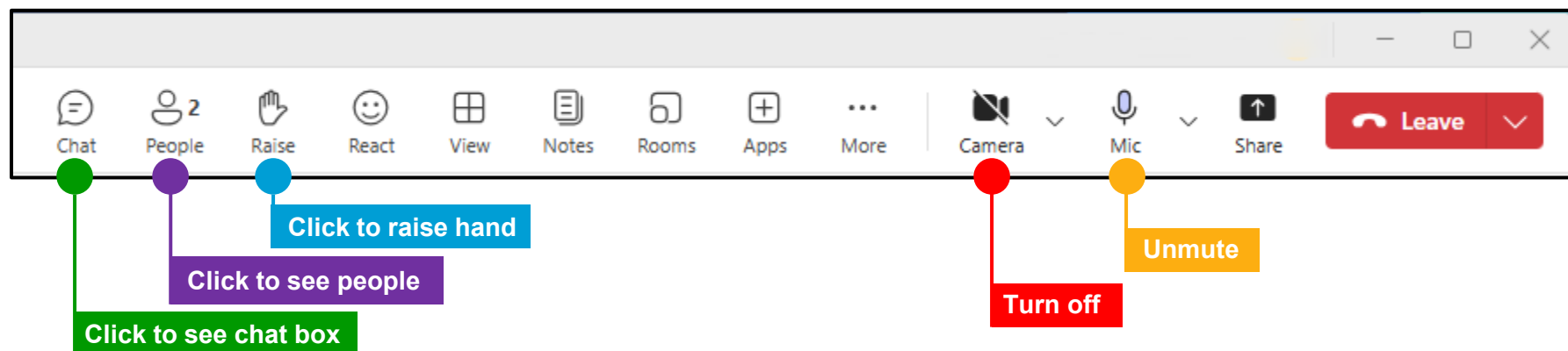


Welcome Virtual Attendees



MS Team & Computer Tips

- Camera – **Turn OFF** to save bandwidth – presentation will be on screen
- Participants – On the lower right, click **People** to open panel
- To ask a question:
 - RAB members – **Raise hand** to be on to speak, **unmute** yourself when called on
 - Public participants – Use **Chat** to type your question





Agenda



- **Welcome and Introductions**
- **Meeting Guidelines**
- **RAB Purpose & Administrative Items**
- **Environmental Restoration Program Update**
 - Per- and Polyfluoroalkyl Substances (PFAS) Drinking Water and Investigation
 - Area 6 Landfill
 - Military Munitions Sites
 - State Petroleum Sites
- **Community Comments/Q&A**
- **Action Items/Next RAB**



Welcome and Introductions



- **Captain Gammache**
- **RAB Community Co-Chair:** Gary Winlund
- **Navy Co-Chairs:** Kendra Clubb & Laura Muhs
- **RAB Members:**
 - Celine Servatius*
 - Maddie Rose*
 - Joe Grogan*
 - Martha Yount*
 - Philip Derise***voting member*



Welcome and Introductions



- **RAB Members (continued):**
 - Chan Pongkhamsing (EPA)
 - Binod Chaudhary (Ecology PFAS)
 - Forrest Malone (Ecology Munitions)
 - Tyga Howe (Ecology Petroleum)
- **Presenters:**
 - Laura Muhs, Laura Himes, & Kendra Clubb
- **Other subject matter experts:**
 - Christie Kroskie, Scott Elkind, & Janice Horton
- **Navy Public Affairs Officers:**
 - Michael Welding & Amanda Surmeier
- **Meeting Host/IT support/Stenographer/Facilitator:**
 - Jennifer Madsen, Lisa David, Doug Armstrong, JoAnn Grady



Question and Answer Guidelines



- ***RAB Members*** will be invited to ask questions or comment after each Navy presentation. Please raise your hand (or use the “Raise” option in MS Teams); when called on, please state your name for the meeting record.
- ***Community Members*** are welcome to ask questions or comment during the “community” portion of the meeting after Navy presentations are complete and RAB members have had the opportunity to speak. Please raise your hand (or use the “Raise” option in MS Teams); when called on, please state your name for the meeting record.

We request that questions and comments focus on the presentation topics and observe a 2-minute time limit to allow for everyone to participate in the Q&A.



Overview : What is the RAB?



*“A RAB is a stakeholder group that meets on a regular basis to discuss **environmental restoration** at a specific property that is either currently or was formerly owned by the Department of War (formerly Department of Defense (DoD)), but where the DoD oversees the environmental restoration process....”*

RAB members are a conduit of information between the community and the Navy.

What is **environmental restoration**?

- Includes all environmental investigations and/or cleanup that fall under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulatory framework.
- Also includes the Military Munitions Response Program (MMRP) and State-regulated Petroleum cleanups.
- Does not include installation compliance issues – pipelines, underground storage tanks, storm water, etc.

More information on RABs, including the RAB Rule Handbook, can be found at: <http://www.denix.osd.mil/rab/home/> and <https://pacific.navfac.navy.mil/NASWIRAB/>



Administrative Items



- **Approve November 2024 RAB Meeting Minutes**
- **Review November 2024 RAB Action Items**
 - **Review RAB Charter & RAB member application**
 - Revised RAB member application in April 2025
 - RAB Navy and Community Co-Chairs review and suggest changes for voting RAB members to consider
- **Discuss/seeking new RAB members**
 - **Community members are voting members**
 - **1-2 meetings per year**
 - **RAB applications available**



PFAS Drinking Water & Investigation Update



Presenter: Kendra Clubb, P.E.

Additional Subject Matter Experts:

Laura Himes, Janice Horton, & Christie Kroskie



NAS Whidbey Island Environmental Restoration Sites



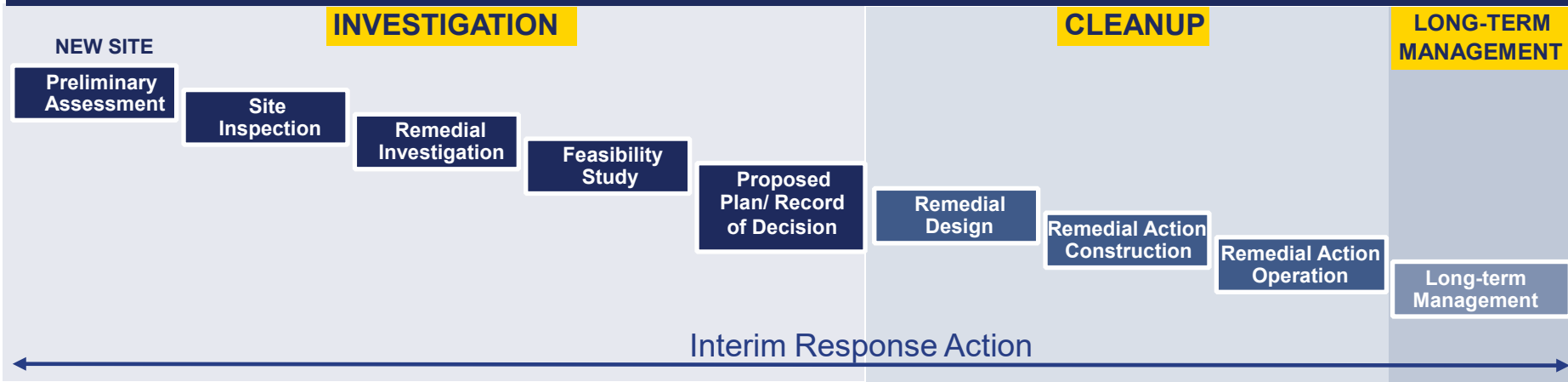


CERCLA PROCESS



CERCLA Implementation Process

Activity boxes do not indicate the relative length of any activity.



- Conducted under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Interim response actions, such as drinking water response actions, can occur any time in the CERCLA process
- Formal public comment period for Proposed Plans



PFAS Drinking Water Policy Background



- **May 2016** - U.S. Environmental Protection Agency (EPA) released lifetime health advisories for two PFAS, perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), at 70 parts per trillion (ppt) for both PFOS and PFOA, individually or combined.
- **June 2016** - Deputy Assistant Secretary of the Navy for Environment issued policy requiring drinking water sampling and testing for PFAS at Navy installations.
- **April 2024** - EPA published the final National Primary Drinking Water Regulation for six PFAS and established enforceable Maximum Contaminant Levels (MCLs), effective 25 June 2024
- **Sept 2024** - DoD published a memorandum that describes DoD's plans to incorporate the EPA's drinking water regulation into DoD's ongoing PFAS cleanups and prioritize actions to address private drinking water wells with the highest levels of PFAS from DoD activities.



PFAS Off-Base Drinking Water Update – Overall Status



- 372 wells sampled to-date near OLF Coupeville, Ault Field, and Area 6 Landfill
- 27 wells (67 homes) exceed DoD PFAS interim action levels for private drinking water wells
- Completed interim removal actions for 15 wells/34 homes including PFAS treatment to the Town of Coupeville's drinking water system (exceeded 70 ppt PFOS and/or PFOA)
- Interim removal actions underway for 12 wells/33 homes (exceeding DoD PFAS interim action levels for private drinking water wells)
- Alternative drinking water (i.e., bottled water or kitchen sink filtrations systems) provided until enduring solution complete
- 84 wells currently sampled as part of the biannual sampling program
 - Wells with prior detections of PFAS with EPA MCLs
 - Wells adjacent to properties with wells at or above 70 ppt PFOS and/or PFOA
 - Wells adjacent to the Navy's interim removal actions



PFAS Off-Base Drinking Water Update



Work conducted since last RAB...

- Expanded drinking water investigation from Jan-May 2025 (public meetings on April 29 & 30)
 - Identified 1 well/4 homes above DoD PFAS interim action level
- Finalized two Time Critical Removal Action (TCRA) Action Memorandums: one for short-term & one for long-term enduring solutions (6 wells/24 homes)
- Continue providing bottled water or kitchen sink filtration systems until enduring solutions in-place
- Biannual drinking water well sampling (May 2025)
- Awarded TCRA contract for 6 wells/24 homes
- Enduring solutions in Coupeville & Oak Harbor:
 - Town of Coupeville operated the PFAS treatment system, including quarterly sampling
 - Coupeville: Completed final segment of new waterlines from Jan-Mar 2025
 - Oak Harbor: Connected one business to City of Oak Harbor waterline, installed 1 new drinking water well & coordinated additional design changes for 2 new wells
 - Both: Finalized TCRA work plans & design for 6 wells/24 homes



PFAS Off-Base Drinking Water Update



Work planned before next RAB...

- Biannual drinking water well sampling (October 2025 and Spring 2026)
- Continue providing bottled water or kitchen sink filtration systems until enduring solutions in-place
- Enduring solutions in Coupeville & Oak Harbor:
 - Town will continue to operate PFAS treatment system, including quarterly sampling and granular activated carbon (GAC) changeout, as necessary
 - Complete TCRA for 9 wells/29 homes & start PFAS quarterly monitoring for 4 new wells & 1 well with PFAS treatment
 - Connect 1 home to Town of Coupeville waterline
 - Connect 9 homes to City of Oak Harbor waterline
 - Install PFAS well-head treatment for 1 home
 - Connect 13 homes to new wells
 - Connect 5 homes to Navy's waterline



NAS Whidbey Island PFAS Remedial Investigation (RI) Locations



- **Ault Field**

- Former Area 6 Landfill – *RI on-going*
- Area 31, Former Runway Fire School – *RI on-going*
- Current Fire Training Area – *RI on-going*
- Ault Field Airfield – *RI on-going*
- Former Wastewater Treatment/Sewage Lagoon Area – *RI planned*

- **Seaplane Base**

- Site 61 - Maintenance Building – *RI on-going*
- Former Biosolids Application Area – *RI planned*

- **OLF Coupeville – *RI on-going***



PFAS EPA Regional Screening Levels



- EPA establishes Regional Screening Levels (RSLs) for chemicals addressed under CERCLA.
- RSLs reflect chemical-specific concentrations for individual contaminants in air, drinking water, and soils that, if exceeded, may warrant further investigation.
- RSLs for PFAS continue to change as new toxicity values are used to refine existing RSLs or develop new RSLs for additional PFAS.
- When EPA updates the RSLs for PFAS, the DoD evaluates and incorporates the updated RSLs, as appropriate, into DoD investigations. PFAS screening levels that are derived from final, peer reviewed toxicity values are taken from EPA's RSL table and incorporated into DoD environmental cleanup investigations to determine if a RI is needed.
- An exceedance of EPA RSLs may indicate additional investigation is needed, **but does not automatically mean a cleanup is warranted**. Site-specific risk assessments aid in determining where cleanup is needed.
- Previous phases of NAS Whidbey Island RIs followed November 2023 EPA RSLs.
- New NAS Whidbey Island RIs and phases of RIs use the November 2024 EPA RSLs as approved by the DoD's January 2025 memorandum*.
- Future RI Reports will follow the latest EPA RSLs as approved by DoD.

*<https://www.acq.osd.mil/eie/eer/ecc/pfas/pfas101/rsl.html>



DoD Screening Levels for PFAS RIs



PFAS	Tapwater RSLs (ng/L)		Residential Soil RSLs (ug/kg)		Note
	November 2023	November 2024	November 2023	November 2024	
Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	1.5	1.5	23	23	1
Perfluorobutanoic acid (PFBA)	1,800	1,800	7,800	7,800	1
Perfluorobutanesulfonic acid (PFBS)	600	600	1,900	1,900	1
Perfluorohexanoic acid (PFHxA)	990	990	3,200	3,200	1
Perfluorohexanesulfonic acid (PFHxS)	39	39	130	130	2
Perfluorononanoic acid (PFNA)	5.9	5.9	19	19	1
Perfluorooctanoic acid (PFOA)	6	0.0027	19	0.019	3
Perfluorooctane Sulfonate (PFOS)	4	0.20	13	0.63	3
Bis(trifluoromethylsulfonyl) amine (TFSl)	590	590	2,300	2,300	1
Perfluoropropanoic acid (PFPrA)	980	980	3,900	3,900	1
Perfluorodecanoic acid (PFDA)	0.004	0.004	0.013	0.013	3
Perfluoroundecanoic acid (PFUDA)	600	600	1,900	1,900	4
Perfluorododecanoic acid (PFDoDA)	100	100	320	320	4
Perfluorotetradecanoic acid (PFTetA)	2,000	2,000	6,300	6,300	4
Perfluorooctadecanoic acid (PFODA)	80,000	80,000	250,000	250,000	4

Notes:

All PFAS RSLs are based on Hazard Quotient (HQ) of 0.1 or cancer risk (CR) of 1E-06, where applicable

1: Nov 2024 PFAS RSLs authorized by DoD

2: Tap water RSL for PFHxS higher than the established MCL. This value was not incorporated.

3: Tap water RSL for PFOA, PFOS, and PFDA are below the method detection limits. These values were not incorporated in to RIs. The NAS Whidbey Island team uses the lowest achievable detection limits using the best available technology by laboratories' with DoD accredited standard methods for RIs.

4: PFAS RSLs were based on toxicity values that were not peer-reviewed and therefore do not meet the minimum data quality standards provided in DoD Instruction. These values were not incorporated in to RIs.



PFAS Investigations Update



Work conducted since last RAB...

- OLF Coupeville RI:
 - Received stakeholder approval of Phase 1 RI Report
 - Completing work plans for Phase 2 RI (fieldwork starts October 2025)
- Current Fire Training Area RI:
 - Preparing the Draft Phase 1 RI report
- Area 31, Former Runway Fire School & Ault Field Airfield RI:
 - Completed the Final Phase 1 RI report (Area 31 only)
 - Completed work plans & started fieldwork for Phase 1 Ault Field Airfield RI & Phase 2 Area 31 RI
- Area 6 Landfill RI:
 - Preparing the draft Phase 1 RI report
 - Awarded Phase 2 RI and started associated work plans
- Baseline Groundwater Model Report for Ault Field/Seaplane Base:
 - Final Report completed
- Seaplane Base Maintenance Building RI
 - Awarded RI & started work plans



OLF Coupeville RI Phase 1 Summary



- **Summary of work:**

- Conducted PFAS sampling at 41 existing on-base wells; installed 12 new on- and off-base monitoring wells and collected samples for PFAS; collected soil samples from 10 on- and off-base borings for PFAS; and collected co-located surface water/sediment samples at three off-base locations for PFAS.
- Refined groundwater flow information with new wells.

- **Conclusions:**

- PFOA and PFOS exceeded soil screening levels (SLs) near PFAS source areas. Additional soil sampling needed on all sides of source areas and west of runway.
- PFOA, PFOS, and PFHxS exceed groundwater SLs in all three aquifer zones. Concentrations are highest at and downgradient to west and southwest of PFAS source areas. Additional groundwater sampling needed west of runway, southern boundary, south and west of OLF, and to lesser extent east of OLF.
- No vadose zone pore water (VZW) sampled in Phase 1 RI. Install lysimeters and collect VZW samples near source areas.
- PFOA, PFOS, PFHxS, and PFNA exceeded surface water SLs in off-base samples south of OLF. Additional surface water and sediment/surface soil sampling recommended on- and off-base.
- Conduct a second phase of RI, perform human health and ecological risk assessments, and conducted background study.



Area 6 RI Phase 1 Summary



- **Summary of work:**

- Conducted PFAS sampling at 40 existing wells; installed 14 monitoring wells and collected samples for PFAS; collected 16 soil samples from 7 borings for PFAS; and collected co-located surface water/sediment samples at 5 locations for PFAS.
- Refined groundwater flow information with new wells.

- **Conclusions:**

- PFAS exceeded the groundwater SLs in groundwater, VZW, and surface water within and beyond the Area 6 boundary.
- PFOA, PFOS, and PFHxS exceed SLs in VZW at the Former Industrial Waste Disposal area. Additional sampling of lysimeter planned.
- PFHxS, PFNA, PFOA, and PFOS exceed SLs in the shallow aquifer across the western portion of Area 6. Off-base shallow aquifer groundwater plumes and single well exceedances above SLs were southwest (PFHxS, PFOA, and PFOS) and southeast (PFHxS only). Additional groundwater sampling needed to west, south, and north.
- PFOA, PFOS, PFHxS, and PFNA exceed SLs at locations within the Area 6 groundwater treatment system effluent. Additional samples planned.
- Conduct a second phase of RI, perform human health and ecological risk assessments, and conducted background study.



Area 31 RI Phase 1 Summary



- **Summary of work:**

- Conducted PFAS sampling at 15 existing monitoring wells; installed nine monitoring wells and collected samples for PFAS; collected soil samples from four borings for PFAS; and collected co-located surface water/surface-soil samples at three locations for PFAS.
- Refined groundwater flow information with new wells

- **Conclusions:**

- PFOA and PFOS exceeded soil SLs near PFAS source areas and southwest of site. Additional soil sampling needed near source areas, west, and south of site
- PFOA, PFOS, PFHxA, PFHxS, PFBS, and PFNA exceeded groundwater SLs. Concentrations are highest at and downgradient to west and southwest of PFAS source areas in shallow groundwater. Additional groundwater sampling needed on-base to north, west and south, and off-base to east.
- No VZW sampled in Phase 1 RI. Install lysimeters and collect vadose zone water samples near source areas.
- PFOA, PFOS, PFHxA, PFHxS, and PFNA exceeded surface water SLs in on-base samples; only PFOS exceeded surface soil SLs. Additional surface water and surface soil sampling needed.
- Conduct a second phase of RI, perform human health and ecological risk assessments, and conducted background study.



PFAS Investigations Update



Work planned before next RAB...

- Whidbey Island PFAS Background Study
 - Award contract and start work plans
- OLF Coupeville RI:
 - Finalize Phase 2 RI work plans & start fieldwork in October 2025
 - Award final phase of RI & start work plans
- Current Fire Training Area RI:
 - Finalize Phase 1 RI report
 - Award Phase 2 RI and start work plans
- Area 31, Former Runway Fire School & Ault Field Airfield RI:
 - Fieldwork to occur from September 2025 to January 2027
- Area 6 Landfill RI:
 - Finalize Phase 1 RI report
 - Finalize Phase 2 work plans and start fieldwork in late summer/fall 2026
- Seaplane Base Maintenance Building RI:
 - Complete work plans and start fieldwork in April 2026



5 Minute Break

Break



Area 6 Landfill Update



Laura Himes, P.E.



Area 6 - ROD Amendment Summary

September 2019



Area 6 –1993 ROD:

- Previous landfill operations: Former Industrial Waste Disposal Area (1969-early1980s); Area 6 Landfill (1969-1992)
- ROD remedy includes: Landfill cap; groundwater treatment plant for chlorinated solvents; groundwater monitoring; and land use controls

1,4-dioxane:

- Emerging contaminant 1,4-dioxane was discovered in 2003, current groundwater treatment plant does not treat it

ROD amendment includes the following:

- Adds 1,4-dioxane as a chemical of concern (COC)
- Remove COCs (1,1-DCA and cis-1,2-DCE) that have reached cleanup levels
- Modifies cleanup levels for 1,1-DCE and vinyl chloride
- Groundwater treatment using Advanced Oxidation Processes (AOP) including new additional treatment plant to south, upgrading current treatment plant to AOP from air stripper and expanding the well network.
- Integrated remedy that will comprise of an active treatment component, monitored natural attenuation (MNA) (passive treatment), and Institutional Controls (ICs)
- Prior to the transition from active to passive remediation, the Navy will validate the efficacy of MNA.



Area 6 Landfill Update



Work conducted since last RAB...

- Southern AOP Groundwater Treatment System:
 - AOP full time operation since October 2021
 - Treated 179 million gallons to date
- Western AOP Groundwater Treatment Plant:
 - AOP full time operation since September 2024
 - Meeting remedial goals for ROD Amendment COCs
- PFAS Treatment for Western AOP Groundwater Treatment Plant
 - Elevated PFAS concentrations in groundwater during PFAS RI especially near former industrial waste disposal area
 - Bench-scale treatability study conducted and report finalized
 - Prepared internal Engineering Evaluation and Cost Analysis (EE/CA)



Area 6 Landfill Update



Work conducted since last RAB...

- Downgradient Delineation:
 - The original sampling results of all 7 new monitoring wells were non-detect
 - Conducted well camera, resurvey, and redevelopment for 6-DW-38 in Sept 2024
 - Resampled all seven wells and 6-DW-38 in Oct 2024 – 1,4-dioxane was detected greater than RGs in 3 of the wells. Vinyl chloride and 1,4-dioxane were delineated.
 - Prepared Downgradient Delineation Investigation Report
- Routine operation activities:
 - Performed land use control inspections
 - Conducted on-going western groundwater treatment system and landfill maintenance and operation
 - Conducted groundwater monitoring



Area 6 Landfill Update



Work planned before next RAB...

- Western AOP system construction:
 - Finalize outstanding submittals including Construction Completion Report and O&M Reports
- PFAS Treatment for Western AOP Groundwater Treatment Plant
 - Finalize EE/CA
 - Prepare and finalize Action Memorandum
 - Prepare and finalize Remedial Design
 - Award Remedial Action Construction Task Order in FY26
- Downgradient delineation investigation:
 - Finalize Downgradient Delineation Investigation Report
- Routine operation activities:
 - Continue on-going south and west AOP groundwater treatment systems and landfill maintenance and operation
 - Conduct groundwater monitoring
 - Conduct land-use control inspections



Military Munitions Response Program Update



Presenter:

Laura Himes, P.E.

Primary Subject Matter Expert:

Scott Elkind, P.E.



Military Munitions Response Program Update





Lake Hancock Target Range



Work conducted since last RAB...

- Reporting
 - Finalized 2024 Surface Clearance Completion Report
- 2025 Surface Clearance
 - Completed surface clearance activities and LUC repairs in August 2025
 - 143 munitions items identified. All were classified as “Material Documented as Safe (MDAS)”
- 1st Five-Year Review
 - Awarded May 2025
 - Estimated completion late spring 2026





Lake Hancock Target Range



Work planned before next RAB...

- Removal Action and LUC, including:
 - Complete 2026 surface clearance within entire removal action area
 - Maintain signage and fencing
- Reporting:
 - Complete 2025 Surface Clearance Completion Report
 - Complete Five-Year Review Report



Future work planned...

- Continue annual surface clearance



State Petroleum Program Update



Presenter:

Laura Himes, P.E.

Primary Subject Matter Expert:

Christie Kroskie, L.G.

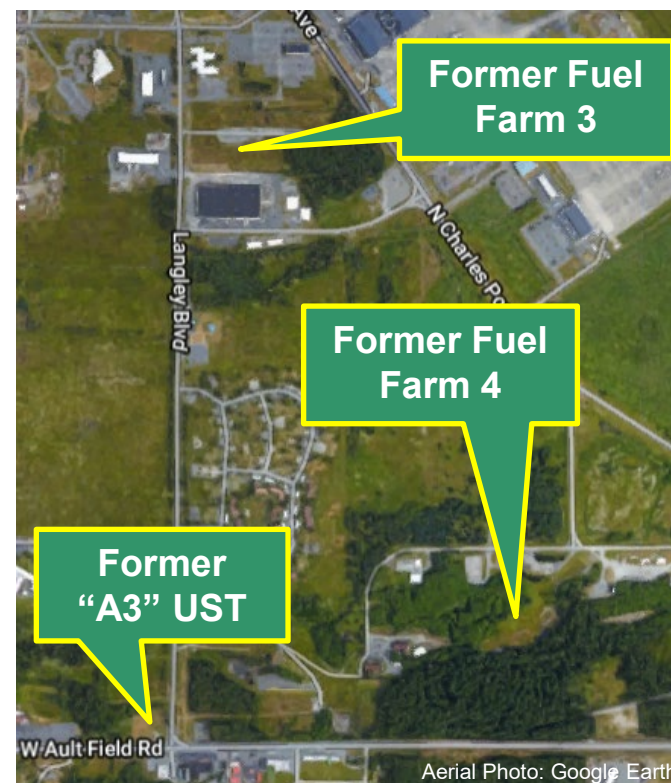
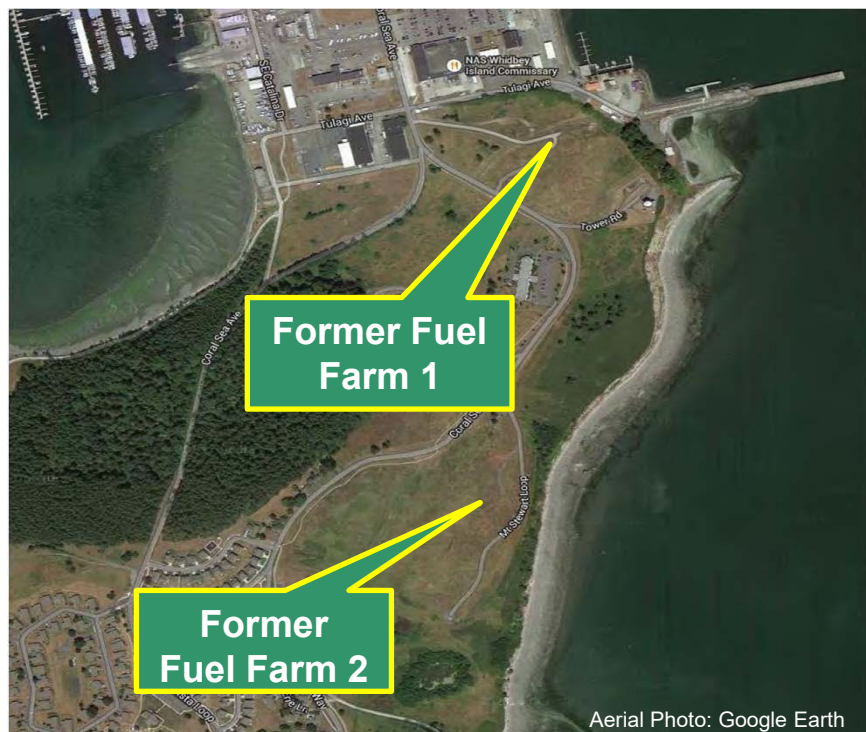
State Petroleum Program Update

Work conducted since last RAB:

- Continued free-product recovery and groundwater monitoring/sampling

Work planned before next RAB:

- Free-product recovery and groundwater monitoring/sampling at Fuel Farms
- Land Use Inspection at Former A3 underground storage tank (UST)





Community Comments



- **We welcome comments from community members**
- **In-person**
 - Please use microphone and state your name
- **On MS Teams**
 - Use “Raise” hand option to be called on to speak
- **On phone**
 - Use *5 to be called on to speak; use *6 to unmute
- **Questions will be answered in the order received**
- **Please keep comments to 2-minutes**



Action Items/Next RAB



- **Action Items**
- **Next RAB ~ Fall 2026**



Relevant websites



- **NASWI RAB**

<https://pacific.navfac.navy.mil/NASWIRAB>

- **NASWI and DoD PFAS**

<https://pacific.navfac.navy.mil/NASWIPFAS>

<https://www.acq.osd.mil/eie/eer/ecc/pfas/map/pfasmap.html>

- **Navy Environmental Restoration Program**

<https://www.navfac.navy.mil/Business-Lines/Environmental/Products-and-Services/Environmental-Restoration/>



THANK YOU



**Thank you for attending the
September 2025 NAS Whidbey Island RAB**

**For more information or additional
questions please contact:**

Naval Air Station Whidbey Island Public Affairs

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Phone: 360-257-2286