

**Department of the Navy (DON)  
Perfluorinated Compounds (PFCs)  
Comprehensive Strategy  
Version 1, 31 Mar 2016**

**BLUF:** Perfluorinated compounds (PFCs) are a suite of chemicals of emerging public health concern to the Navy, U.S. Environmental Protection Agency (EPA), state regulators, public water systems, and the general public, primarily in drinking water systems. This strategy addresses PFCs in drinking water, the drinking water program, the environmental restoration program (on and off installation), and the acquisition, firefighting, and facilities management programs. DON policies, positions, and messages are aligned throughout the Department and with the Office of the Secretary of Defense.

**Communications:**

**Need 1:** DON repository of Frequently Asked Questions (FAQs), Q&As, questions and answers (Q&As), fact sheets, Public Affairs Guides (PAGs), media responses, outreach material (internal and external [Environmental Protection Agency (EPA) and Agency for Toxic Substances and Disease Registry (ATSDR)]). We need to be accurate, consistent, transparent, and efficient.

- Where to store this info?
- Who maintains?
- Who has access?

**Need 2:** Standardized chain of command review/approval lines for media and congressional inquiries, CODEL requests, leadership briefings/testimony.

- DASN (E) approval authority for policy decisions and new responses.
- Integrate into repository of FAQs, Q&As, etc. above to ensure everyone answers routine, similar, repeat questions consistently and efficiently.

**Existing Policies and Guidance:**

- DASN(E): Perfluorinated Compounds (PFCs) – An Emerging Environmental Issue, 21OCT14
- USMC: Sampling and Testing for Perfluorinated Compounds (PFCs) in Drinking Water, 12DEC14
- NAVFAC: Perfluorinated Compounds (PFCs) Interim Guidance/Frequently Asked Questions (FAQs), 29JAN15
- OPNAV N45: Navy Drinking Water Sampling Policy for Perfluorochemicals Perfluorooctane Sulfonate and Perfluorooctanoic Acid, 14SEP15
- BUMED: Testing for Perfluorinated Compounds (PFCs) in Drinking Water, 24DEC15
- DoDIs 4715.06, 4715.07 and 4715.18, DoDM 4715.20
- Air Force SAF/IEE: AFFF Disposal and Replacement – Aircraft Rescue and Fire-Fighting (ARFF) Vehicle Crash Response Vehicles, 9MAR16
- UFC 4-211-01n “Aircraft Maintenance Hangars: Type I, Type II And Type III”
- UFC 3-601-02 Operation and Maintenance: Inspection, Testing, and Maintenance of Fire Protection Systems

**Comment [LN1]:** The scientific community consistently likes to use the term “PFSA – Per and Polyfluoroalkyl Substances because it is all encompassing.” We might want to consider expanding the scope if we are talking about substances beyond PFOS and PFOA. On the other hand, that might make messaging more confusing...

**Comment [LN2]:** NAVFAC EV: Do we want to mention somewhere in this strategy that our sampling focus will only be on PFOA/PFOS or on those PFCs that have PHA levels? I think this is crucial to ensure that we don’t open the door for sampling to be done of the full suite of PFCs

**Comment [WKCNCM3]:** PFC issues are now affecting at least two land transfers – Melville Marina at Newport and a (BRAC?) site in CA. Suggest considering whether the strategy should include recommendations regarding property transfer issues as well.

**Comment [CJMCNAE4]:** Recommend keeping a spreadsheet that includes: Date of inquiry, name of person inquiring, affiliation of person inquiring, recipient of inquiry, date of response.

**Comment [LN5]:** NAVFAC EV: NAVFAC EXWC maintains the ERB Web Page, there is some info on PFCs located there already for use in this DON repository; the RITS has also had a PFC topic presentation from 2015 with case studies from BRAC sites. Navy also has an Environmental Portal which could be used as a data repository.

**Comment [djb6]:** At a minimum, public affairs POCs should have access to the approved FAQs, so that response to media inquiries can be consistent and as painless as possible for RPM.

**Comment [djb7]:** Not that I’m in favor of it, nor does it say too much, but should the revised AF guidance & “press release” be included?

Should the Navy be developing something similar?

**Comment [CJMCNAE8]:** Also, if we are going to include AF information they have an interim policy from 2012 that we should include.

- NFPA 412 Standard for Evaluating Aircraft Rescue and Fire-Fighting Foam Equipment, 2014
- NFPA 11 Standard for Low-, Medium, and High-Expansion Foam, 2016

### Navy Drinking Water:

- DON complied with the third Unregulated Contaminant Monitoring Rule (UCMR3) sampling requirements in the U.S. Under UCMR3, DON tested drinking water at 19 Navy and seven USMC installations with no exceedance of the Provisional Health Advisory (PHA) levels for PFOA or PFOS.
- DASN(E) policy required testing at additional locations in the U.S. if there was a known or suspected release of PFCs within about approximately a mile upgradient of the source water. Navy sampled 10 installations, with Naval Auxiliary Landing Field (NALF) Fentress, which serves approximately 50 people, in Chesapeake, VA as the only installation with an exceedance of the PHA. USMC sampled one installation with no PHA exceedances.
- DASN(E) policy also required testing at all overseas locations. USMC completed testing at four locations with no PHA exceedances. Navy sampling is underway. All compiled sample results expected by May 2016.
- DON policy is to utilize the PHA values for drinking water as if they were a regulatory standard and provide alternative water for drinking and cooking if the PHA is exceeded. When/if final health advisory (HA) values or Safe Drinking Water Act (SDWA) regulatory standards (e.g. maximum contaminant levels (MCLs)) are established, these will replace the PHAs as PHA action levels. DON will also comply with any State standards that are properly promulgated and used consistently across the State pursuant to the State's delegated federal authority under the SDWA (e.g., PFNA in NJ).
- USMC will fund using local O&M/base operating funds, with support from higher HQ as required. Navy will require funding by the drinking water system facility maintenance owner.
- A looming question posed by DON leadership is “can we say now that all of our personnel on base are provided water without PFCs above an action level?” Since not every installation has sampled for PFCs under the SDWA, UCMR, or DON policy, the current answer has to be no. To determine the universe of sites where this question cannot be answered, DASN(E) will request from Navy and USMC a list of installations under the following categories:
  - DON owned water system sampled under UCMR
  - DON owned water system (including overseas) sampled under DON policy
  - DON purchased water from off installation where PWS sampled under UCMR
  - DON owned water system not sampled (non-public water systems, water systems that did not meet the policy criteria)
  - DON purchased water from off installation where PWS not sampled

### Environmental Restoration Program:

- DON is following policy/guidance in DoDI 4715.07, DoDM 4715.20, DoDI 4715.18, and Navy Environmental Restoration Program (NERP) Manual to conduct Defense

**Comment [djb9]:** This section is specific to Navy drinking water or drinking water on Navy installations. It does not address private well drinking water or non-Navy public drinking water. Does there need to be a separate section (maybe in the restoration section) to highlight that, depending on the CSM, non-Navy drinking water may be of concern.

**Comment [SRGCNME10]:** Do we need to address other routes of exposure that are currently being established that will ultimately create a risk-specifically eco (ingestion of animals with PFCs since they bioaccumulate). Possibly add a sentence that says “as screening values are established for other routes of exposure, new policy/guidance will be established”.

**Comment [djb11]:** Also for completeness, these installations should be listed here or in an attachment.

**Comment [WKCNCM12]:** Spell out PFOA and PFOS – first time in text. There are a lot of acronyms throughout the document that should be spelled out the first time they're used.

**Comment [CJMCNAE13]:** Dave—per your comment below until someone has coordinated w/ Compliance and verified (1) water source and (2) UCMR3 data of that source, I don't think we ... [1]

**Comment [SRGCNME14]:** PFCs now include over 100 compounds; recommend don't limit this strategy to only PFOA/PFOS.

**Comment [djb15]:** To be clear and transparent, I think a follow-on statement is necessary. This highlighted statement is specific to Navy-own ... [2]

**Comment [SRGCNME16]:** One clarification regarding the evaluation of testing of Navy water systems. Initially, only Navy public water syst ... [3]

**Comment [SRGCNME17]:** Recommend that “source water” be changed to “Water supply source (e.g. lakes, reservoirs, wells)”

**Comment [djb18]:** To be consistent with language in policy and rest of the document, I think this should be reworded to state that: ... [4]

**Comment [WL19]:** Recommend clarity on “standards” versus guidelines. NJ is an example.

**Comment [SRGCNME20]:** Probably need to define what is meant by “properly promulgat ... [5]

**Comment [MSACCN21]:** Has this policy been properly vetted and approved through DoD? ... [6]

**Comment [SRGCNME22]:** Midlant is currently planning to use our CNIC N4 utilities account as the funding source at Fentress

**Comment [WL23]:** Not a BRAC comment, but I recommend that this paragraph be referenced in “Drinking Water” section above. This section ... [7]

**Comment [WKCNCM24]:** Suggest identifying a specific funding source here. If it's not ER,N, suggest identifying specifically what it is.

**Comment [LN25]:** Recommend adding funding language to the drinking water section too, or ... [8]

Environmental Restoration Program (DERP) response actions for PFCs, consistent with any other contaminant. No additional policy is required to address PFC releases under DERP, however DASN(E) plans to issue the direction below to efficiently complete a comprehensive inventory of potential release sites across DON.

- Restoration conducted at overseas installations must be conducted in accordance with DoD Instruction 4715.08 and country-specific restoration guidance, if any, provided by DoD Lead Environmental Components pursuant to DoDI 4715.08.
- NOTE: OSD responded to a reporter's question and in December 2015 released a list of 664 fire or crash training sites (DERP sites identified in KBCRS database) throughout DoD. This list was compiled by searching for certain terms (e.g., fire training) without any verification. Of the 664 sites, 143 are identified as DON sites. Fire and crash sites are just one category of potential PFC release sites, so this list is not complete or necessarily accurate for DON or DOD.
- A more extensive internal DON inventory review considering additional PFC release categories has identified 267 known or suspected PFC release sites to date, including most of the 143 identified by OSD. The following actions are underway/planned:
  - Finalize list of categories where PFCs may have been used/or and released. (Kim)
  - Complete compilation/verification of active installation (funded with Environmental Restoration – Navy (ER,N)) and Base Realignment and Closure (BRAC) location PFC site inventories. (Kim and Lawrence)
  - ~~Finalize list of categories where PFCs may have been used/or and released.~~ (Kim)
  - Need to further identify additional known or suspected releases of PFCs on active installation and BRAC locations. Since conducting CERCLA preliminary assessments is costly and time consuming, DASN(E) will be issuing direction to quickly and cost effectively identify all (~95-99% solution) known or suspected PFC release sites. DASN(E) will disseminate the existing lists of DERP sites and PFC release categories to BRAC, CNIC and USMC who will conduct facility-wide reviews to identify additional potential DERP sites to "assess".
- Funding:
  - Conduct all investigations, removal, and remedial actions using ER,N or BRAC funding.
  - Address all off-installation contaminant migration, including provision of alternative water, where appropriate, using ER,N or BRAC funding.
  - Do not use ER,N funding to provide alternative water on an installation (e.g., NALF Fentress) or to install, operate, or test finished drinking water treatment systems. These on-installation drinking water systems must meet all SDWA and DON policy requirements. USMC will fund using local O&M/base operating funds, with support from higher HQ as required. Navy will require funding by the drinking water system facility maintenance owner.
  - Remediation conducted at overseas installations must be funded with Environmental Compliance funding, not ER,N funding.
- Prioritization – all known or suspected PFC release sites will need to be assessed to determine whether they require further DERP response actions. **The number one objective is to identify sites with likely/potential direct exposure via DON-caused contamination reaching public or private drinking water supplies so that the exposure can be eliminated.** Once a list of potential sites is known, the following

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**Comment [CJMCNAE26]:** Per my discussion with Tim, some things are listed that don't really have a history of AFFF use so we should be clear that the list is also inaccurate, lest someone think we need to sample at all those sites.

**Comment [LN27]:** NAVFAC Washington: What categories are currently included? Does the sentence "DASN(E) will disseminate the existing lists of DERP sites... to "assess"." mean Kim's list of 267 known or suspected PFC release sites? Is this the "direction" or in addition to the "direction" referenced? This states that CNIC/MC is responsible for determining potential DERP sites. Is this what we did for other ECs? Will they do it for free?

**Comment [LN28]:** NAVFAC EV: For further identification of known and suspected releases, NAVSEA hosts a database identified as NOSC Net, which would be a useful source of data for release sites. With respect to remote crash sites, many of these self-extinguish prior to responders arriving on scene. For hangar system releases, AFFF is often not contained because hangar doors are left open.

**Comment [LN29]:** 5090.1D does not currently require reporting of AFFF spills - We may want to consider changing Chapter 39 to require spill reporting (using the message format) which would be tracked in NOSC Net.

**Comment [WL30]:** Added for clarity.

**Comment [SRGCNME31]:** Current operational facilities will need to be evaluated and addressed outside the DERP/ERN program.

**Comment [WL32]:** Please clarify, DERP may be restrictive, it is likely that there are PFC relea... [9]

**Comment [SRGCNME33]:** Recommend... [10]

**Comment [LN34]:** NAVFAC Washing... [12]

**Comment [LN35]:** NAVFAC Washing... [11]

**Comment [MSACCN36]:** Technically p... [13]

**Comment [SRGCNME37]:** Due to curr... [14]

**Comment [MSACCN38]:** Again, the de... [15]

**Comment [MSACCN39]:** What is the le... [16]

**Comment [LN40]:** Providing an alternat... [18]

**Comment [djb41]:** Why? If NPL, this... [17]

**Comment [SRGCNME42]:** Midlant is c... [20]

**Comment [WL43]:** Not a BRAC comm... [21]

**Comment [WKCNC44]:** Suggest ident... [19]

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**Comment [MSACCN45]:** Again, ER,N... [22]

**Comment [LN46]:** NAVFAC EV, SE, C... [23]

prioritization hierarchy should be used to assess each installation/site, taking into account site-specific circumstances.

- Each installation shall identify known or suspected PFC release sites, determine known or likely groundwater flow direction, and identify potential drinking water exposure pathways (e.g., public or private drinking water wells) within approximately 1-mile down gradient. If the conceptual site model is incomplete for any reason, sites should not be removed from sampling consideration without appropriate justification. In coordination with the installation cleanup team (team composition and designations vary but normally include NAVFAC project manager, State regulator, and sometimes EPA regulator), these exposure pathways/drinking water sources shall be investigated, and if levels exceed thresholds (e.g. PHA levels), eliminate the exposure pathway (e.g., provide alternative water).
- Remaining sites shall be prioritized for assessment, investigation, and remediation (if needed) in coordination with the cleanup teams for each installation. Factors to consider are:
  - Groundwater designation (e.g. beneficial or non-beneficial use)
  - Property ownership (e.g., DON owned or transferred)
  - Potential exposure pathways other than drinking water
  - For BRAC, timeframe for anticipated future property transfers
  - Potential for other potentially responsible parties
- Completion of all DERP response actions will be a multi-year process similar to any other contaminated site.

**Comment [SRGCNME47]:** It is imperative that the RPM understands the entire CSM for the base, including possible source area, migration pathways, lithology, points of extraction, septic tank locations, treatment facilities (including disposal areas for same facilities), etc)

**Comment [LN48]:** NAVFAC Washington: It does not say anything about actually sampling the groundwater. Assuming this prioritization is to be done before sampling is to take place? Additionally, this section does not read as a prioritization hierarchy. The only true prioritization in the section are the sites with down-gradient drinking water wells within one mile. The rest of the paragraph are factors to consider for all other sites, but no direction as to which determine priority.

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**Comment [WL49]:** Recommendation #3 from ATDSR Health Consult letter for NAWC Warminster.

**Comment [SRGCNME50]:** Recommend the inclusion of a reminder for proper documentation: Action memos for any TCRA

**Comment [SRGCNME51]:** Regulators as asking about where has the past disposal of possible PFC contaminated material has gone (sludges, filter backwash, etc) . Past practice of spray application of material on land may have created an issue.

**Comment [LN53]:** EXWC Tech Review was completed in Feb 2016. Document will be forwarded under separate cover.

### **Technology:**

To support our drinking water and cleanup programs, we plan to consolidate information on the state of technology and research and development investments being made regarding:

- Drinking water treatment technologies
- Groundwater treatment technology for both in-situ and ex-situ implementation
- Soil treatment technologies for on site
- Off-site disposal of soil or other contaminated media

### **Specific Installations:**

To date, two BRAC and two active installations have been at the forefront of the PFC issue due to PFC being detected in public and/or private drinking water wells on or near these installations. Each installation has generated a lot of material, fact sheets, PAGs, Q&As, etc. The four locations and their established web links are:

- Warminster:  
[http://www.bracpmo.navy.mil/brac\\_bases/northeast/former\\_warfare\\_center\\_warminster.html](http://www.bracpmo.navy.mil/brac_bases/northeast/former_warfare_center_warminster.html)
- Willow Grove:  
[http://www.bracpmo.navy.mil/brac\\_bases/northeast/reserve\\_base\\_willow\\_grove.html](http://www.bracpmo.navy.mil/brac_bases/northeast/reserve_base_willow_grove.html)
- Fentress:  
[http://www.cnic.navy.mil/fentressinfo/regions/enrma/installations/nas\\_oceana/om/environmental-support/NALE\\_fentress\\_drinking\\_water.html](http://www.cnic.navy.mil/fentressinfo/regions/enrma/installations/nas_oceana/om/environmental-support/NALE_fentress_drinking_water.html)

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• Earle:

[http://www.cnic.navy.mil/earleinfo/regions/enrma/installations/nws\\_earle/om/environmental\\_support/nws\\_earle\\_msc\\_ffs\\_drinking\\_water.html#entress](http://www.cnic.navy.mil/earleinfo/regions/enrma/installations/nws_earle/om/environmental_support/nws_earle_msc_ffs_drinking_water.html#entress):

[http://www.cnic.navy.mil/regions/enrma/installations/nas\\_oceana/om/environmental\\_support/NALE\\_fentress\\_drinking\\_water.html](http://www.cnic.navy.mil/regions/enrma/installations/nas_oceana/om/environmental_support/NALE_fentress_drinking_water.html)

• Earle:

[http://www.cnic.navy.mil/regions/enrma/installations/nws\\_earle/om/environmental\\_support/nws\\_earle\\_msc\\_ffs\\_drinking\\_water.html](http://www.cnic.navy.mil/regions/enrma/installations/nws_earle/om/environmental_support/nws_earle_msc_ffs_drinking_water.html)

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### Health Studies:

- Many requests are being made to conduct health studies where there is contamination on site or in drinking water; however, the desired outcomes of the requested studies are not always clear.
- Health studies cannot determine whether an individual's exposure to past PFC contaminated water has caused or will/may cause specific adverse health effects in the future. The public has been exposed to PFCs for many years as PFCs are in many consumer products (e.g., non-stick cookware, microwave popcorn bags, stain resistant carpet, etc.). There are also many other confounding factors (e.g., other chemical exposures, smoking, etc.) that cause similar adverse health effects and thus preclude the ability to determine a conclusive cause and effect for an individual.
- DON is investing funds proactively to eliminate exposures from DON releases, as discussed above.
- BUMED policy recommends not sampling individual's blood.
- ATSDR has guidance on health studies. Will want to summarize and reference.
- **Need to develop a unified DON/DoD position, plan, statement, etc. to address this matter.**

**Comment [WKCNCM54]:** Suggest rephrasing this. Whose desired outcome? Phrase is too subjective. Suggest moving up the BUMED point here and saying something like "however, BUMED and other health agencies do not recommend them at this time."

**Comment [CJMCNAE55]:** ATSDR has information, but remember rather than push back on New Hampshire DOH, they agreed to analyze blood samples from Pease AFB. I know this isn't a specific comment but we should be cognizant of their actions, despite any guidance they may have.

**Comment [SRGCNME56]:** Inset recent BRAC statement: Department of Navy funded independent health risk assessment in connection with the impacts of perfluorinated compounds (PFCs) in the vicinity of both installations. The response stated that any health effect study likely would be unable to achieve definitive conclusions regarding linkages of health effects with PFOA/PFOS.

**Comment [WKCNCM57]:** Is this a new environmental liability cost that needs to be budgeted? How should that be done?

**Comment [LN58]:** CNIC N3/N45-NAVFAC EV: Will DLA be able to provide assistance in the development a comprehensive disposal strategy in addition to "support the Services risk management actions to include AFFF procurement strategies and inventory assessment"?

### Aqueous Film Forming Foam (AFFF):

The DoD Emerging Contaminants Governance Council (ECGC) issued a policy memorandum on January 28, 2016 that specifies:

- The Military Services will:
  - Issue Service-specific risk management procedures to prevent uncontrolled land-based releases of AFFF during maintenance, testing, and training activities.
  - Where and when practical to do so, remove and properly dispose of PFOS-based AFFF from the local stored supplies for non-shipboard use to prevent future environmental response action costs. Focus on removing and replacing known PFOS-based AFFF in unopened drums/can versus AFFF already loaded into systems tanks/bladders. PFOS-free AFFF is available on the DoD Qualified Products List.
- DLA will support the Services risk management actions to include AFFF procurement strategies and inventory assessment.
- The DoD Strategic Environmental Research and Development Program will issue a Statement of Need to initiate research to develop a fluorine-free AFFF.

Proposed elements for ASN(EI&EEH) policy to meet these DoD directions are:

- Require Best Management Practices (BMPs)/containment for all AFFF storage and system applications. This includes HAZMAT/supply areas, mobile equipment, training locations, fixed flooding systems, etc.
- Require replacement and proper disposal of all AFFF containing PFOA or PFOS, as follows:
  - All partial and full containers of material within 6 months
  - All mobile firefighting and crash response aircraft rescue and fire-fighting vehicles within 12 months
  - All fixed and training systems without complete containment and disposal BMPs in place within 18 months
  - All fixed and training systems without complete containment and disposal BMPs in place within 36 months
  - All shipboard systems during next availability, but no later than 60 month
- Analyze new C-6, non C-8 or Meets EPA 2015 Guidance AFFF formulations for other PFCs of concern.
- Require assessment of the availability of PFOA/PFOS-free AFFF products on QPL-24385.
- Require guidance/information be provided for purchasers and end users for ordering PFOA/PFOS-free AFFF products on QPL-24385 via NAVMSG, Advisory, other (advanced change notice to MIL-SPEC; applicable Tech. Manuals, etc.).
- Require cancellation of national stock numbers (NSNs) (or other) for all PFOA/PFOS containing AFFF products on the QPL-24385 by [future date certain].
- Require the development of an emergency response plan (region/installation) that can be implemented within 48 hours; ensuring that alternate water supplies are delivered to affected on base personnel. Plan shall have an approved funding sources identified
- Require all new purchase firefighting and crash response vehicles and ships with AFFF systems to only use C-6, non-C8, or Meets EPA 2015 Guidance AFFF.
- Continue R&D on PFC-free AFFF.

- Comment [mrp59]:** Matches item 2 of the 28 JAN 16 DoD ECGC guidance.  
Also, from the 5 APR 16 meeting, no confidence in availability of "PFOA-free" AFFF. Even in the newest "C-6", "non C-8" or "Meets EPA 2015 Guidance" formulations, there might be trace amounts of PFOA.  
If PFC-free AFFF becomes available, then initiate another program to replace and dispose of PFC-containing AFFF.
- Comment [LN60]:** CNIC N3/N45-NAVFAC EV: Navy Fire and Emergency Services has approximately 50k gallons of 3M AFFF (PFOS) and ~82K (PFOA) of the 132k gals AFFF in the current inventory. Of the 132K gallons in the current inventory, approximately 70k gallons is in storage (containerized - 5/55 gallon drums) and approximately 64k gallons is in fire trucks' tank systems. Estimated quantity of AFFF to be disposed of from draining the trucks' tank systems/triple rinsing is approximately 254k gallons. Thus, total estimated disposal quantity includes 70k gallons of containerized AFFF and approximately 254k gallons which will need to be containerized for disposal. To capture accurate disposal cost estimates from the AFFF storage/estimated effluent recovery will require detailed assessment at regions/installations. Significant disposal costs anticipated. Who is the resource sponsor for the disposal costs? Can the disposal costs be programmed for in POM19 or later? Rational: To get an accurate disposal cost estimates will require detailed assessment/coordination at Region N3/N4 staff. We may encounter significant costs to ... [24]
- Comment [WKCNCM61]:** Bullets 3 and 4 seem to be the same except for the compliance date. Are they supposed to be different?
- Comment [djb62]:** This says the same thing, but has 2 different time frames.
- Comment [LN63]:** NAVFAC EV: The policy focuses on replacement and disposal of systems without proper containment. Recommend adding in language to provide guidance on if, when, and how those systems with containment should be re ... [25]
- Comment [mrp64]:** All of the remaining requirements, with the exception of R&D on PFC-free alternatives, should only be valid if new formulations of AFFF do not contain high le ... [26]
- Comment [mrp65]:** Recommend changing "PFOA-free" to "C-6, non C-8, or Meets EPA 2015 Guidance". No confidence in the availability of "PFOA-free" AFFF, there may be trace amounts of PFOA in these formulations.
- Comment [djb66]:** Before disposing of existing AFFF, this should be done first. Move up the list.
- Comment [mrp67]:** See comment mrp3.
- Comment [mrp68]:** Replace "PFOA containing" with "not meeting C-6, non C-8, or Meets EPA 2015 guidance"
- Comment [SRGCNME69]:** This issue still needs resolution
- Comment [mrp70]:** This will need to be coordinated with ASN(RD&A).

**Page 2: [1] Comment [CJMCNAE13] Corack, Jennifer M CIV NAVFAC Atlantic, EV 4/18/2016 1:58:00 PM**

Dave—per your comment below until someone has coordinated w/ Compliance and verified (1) water source and (2) UCMR3 data of that source, I don't think we can say your proposed edit. Plus there are some sites like Indian Head which exclusively gets water on site, but they say they have no PFC releases. However, when we first searched for sites, they came up under "AFFF" and there is a fire training area. However, during the data call the ER Manager said that the fire training area isn't a CERCLA site (so I guess they didn't consider it).

**Page 2: [2] Comment [djb15] Barclift, David J CIV NAVFAC LANT, EV 4/18/2016 1:58:00 PM**

To be clear and transparent, I think a follow-on statement is necessary. This highlighted statement is specific to Navy-owned drinking water systems. For installations that are on non-Navy owned public water something like this should be added:

All other Navy installations are served by public water systems that also complied with UCMR3.

**Page 2: [3] Comment [SRGCNME16] Schirmer, Robert G CIV NAVFAC MIDLANT, EV 4/18/2016 1:58:00 PM**

One clarification regarding the evaluation of testing of Navy water systems. Initially, only Navy public water systems (those serving more than 25 people) were evaluated for testing. There are approximately 35 Navy water systems that serve less than 25 people. The strategy should clarify address whether we are also going to evaluate testing at Navy Non-PWS. Cutler was a system that fell into this category.

**Page 2: [4] Comment [djb18] Barclift, David J CIV NAVFAC LANT, EV 4/18/2016 1:58:00 PM**

To be consistent with language in policy and rest of the document, I think this should be reworded to state that:

**Page 2: [5] Comment [SRGCNME20] Schirmer, Robert G CIV NAVFAC MIDLANT, EV 4/18/2016 1:58:00 PM**

Probably need to define what is meant by "properly promulgated", since most States differ on how guidance becomes "policy"

**Page 2: [6] Comment [MSACCN21] McBride, Sean A CIV CNRMA, N00L 4/18/2016 1:58:00 PM**

Has this policy been properly vetted and approved through DoD? Given the direction many states are going, this could be problematic.

**Page 2: [7] Comment [WL23] Lin, Willie CIV NAVFAC HQ, BRAC PMO 4/18/2016 1:58:00 PM**

Not a BRAC comment, but I recommend that this paragraph be referenced in "Drinking Water" section above. This section is focused on ER,N, the compliance side should understand funding also.

**Page 2: [8] Comment [LN25] Lindsay Nehm 4/18/2016 1:58:00 PM**

Recommend adding funding language to the drinking water section too, or create a separate funding section instead of having it buried under Restoration.

**Page 3: [9] Comment [WL32] Lin, Willie CIV NAVFAC HQ, BRAC PMO 4/18/2016 1:58:00 PM**

Please clarify, DERP may be restrictive, it is likely that there are PFC releases at non-DERP sites.

**Page 3: [10] Comment [SRGCNME33] Schirmer, Robert G CIV NAVFAC MIDLANT, EV 4/18/2016 1:58:00 PM**

Recommend CNIC & USMC be required to coordinate with installation's fire department to locate current & past areas of concern and & discuss fire equipment maintenance/testing "practices" that would have sprayed AFFF onto the ground

**Page 3: [11] Comment [LN35] Lindsay Nehm 4/18/2016 2:17:00 PM**

NAVFAC Washington: It is noted below that "preliminary assessments [are] costly and time consuming" and instead "DASN(E) will disseminate the existing lists of DERP sites and PFC release categories to CNIC and USMC who will conduct facility-wide reviews to identify additional potential DERP sites to "assess"".

Are these not essentially PAs? And if so, wouldn't it behoove the Navy to conduct the investigations as PAs such that our regulatory partners are satisfied that our "facility-wide reviews" are truly comprehensive?

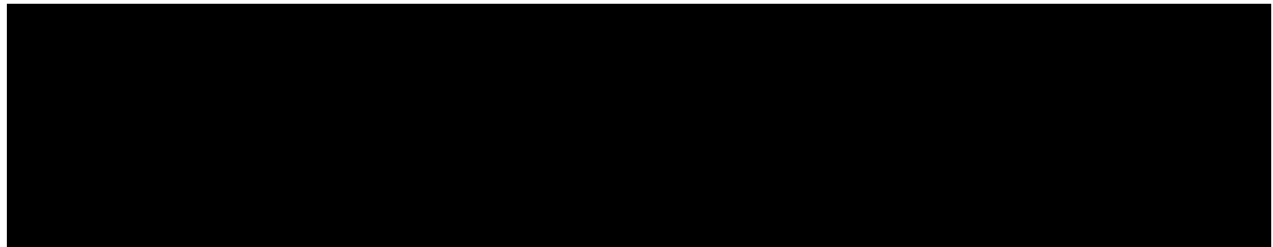
With the same considerations in mind, for those sites that the "facility-wide review" recommends further investigation, shouldn't follow-on sampling be conducted as an SI (or at least follow SI guidance) and have a UFP-SAP?

Presumably for those sites that have now been sampled (as part of an SI or not) and have been identified as having PFCs in environmental media, new sites should be opened in NORM at Phase 2. And, regardless of what process was used in the past (PA/SI or other), the next phase would be an RI, which would follow CERCLA guidance like any other ER site. Is that the case?

**Page 3: [12] Comment [LN34] Lindsay Nehm 4/18/2016 2:18:00 PM**

NAVFAC Washington: Regarding "potential" PFC sites, if a site is on the "LIST" is there the expectation that it will be sampled even if it was likely never used at the site ( ex. BAINBRIDGE)? If that is not the expectation, need to clarify we are to still follow the interim guidance about sampling based on CSM and not to simply to prove the negative.

**Page 3: [13] Comment [MSACCN36] McBride, Sean A CIV CNRMA, N00L 4/18/2016 1:58:00 PM**



**Page 3: [14] Comment [SRGCNME37] Schirmer, Robert G CIV NAVFAC MIDLANT, EV 4/18/2016 1:58:00 PM**

Due to current level of measurement requirements in parts per trillion, need to develop a consistent approach on how off base monitoring will proceed, if detections are below PHA. Need to ensure that using 25% of PHA level for continued monitoring is the desired path forward

**Page 3: [15] Comment [MSACCN38] McBride, Sean A CIV CNRMA, N00L 4/18/2016 1:58:00 PM**

Again, the decision to use O&M,N at Fentress for alternative water was not designed as a remedial or response action. The implementation of a remedial or response action may require the use of ER,N.

**Page 3: [16] Comment [MSACCN39] McBride, Sean A CIV CNRMA, N00L 4/18/2016 1:58:00 PM**

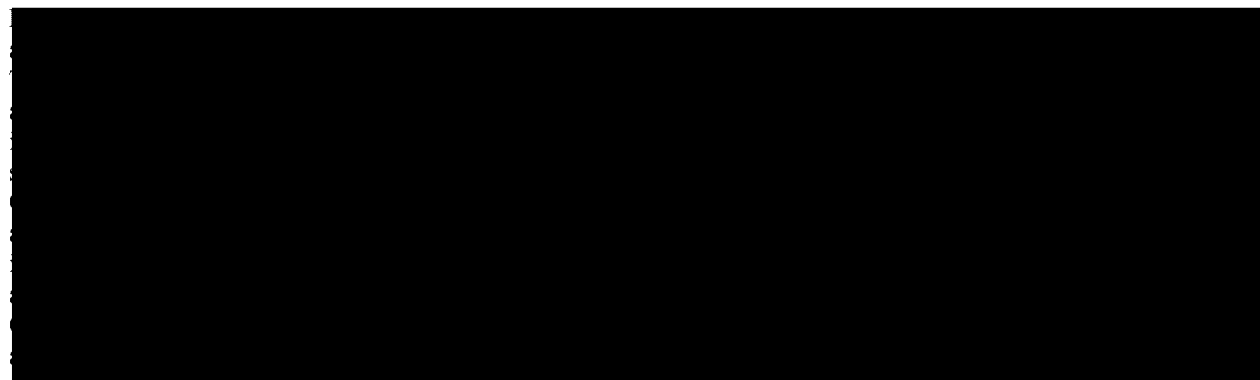




Appropriate consideration should be given to a policy that dictates that the investigation and sampling be done with ER,N but the remedy to the contamination funded with O&M,N.

**Page 3: [17] Comment [djb41] Barclift, David J CIV NAVFAC LANT, EV 4/18/2016 1:58:00 PM**  
Why? If NPL, this can be covered by CERCLA removal action authority (TCRA).

**Page 3: [18] Comment [LN40] Lindsay Nehm 4/18/2016 2:07:00 PM**



**Page 3: [19] Comment [WKCNC44] Will, Katherine CIV NAVFAC MIDLANT, Counsel 4/18/2016 1:58:00 PM**



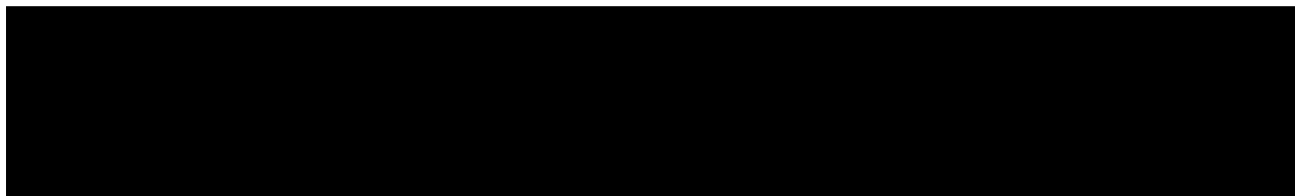
**Page 3: [20] Comment [SRGCNME42] Schirmer, Robert G CIV NAVFAC MIDLANT, EV 4/18/2016 1:58:00 PM**  
Midlant is currently planning to use our CNIC N4 utilities account as the funding source at Fentress

**Page 3: [21] Comment [WL43] Lin, Willie CIV NAVFAC HQ, BRAC PMO 4/18/2016 1:58:00 PM**  
Not a BRAC comment, but I recommend that this paragraph be referenced in "Drinking Water" section above. This section is focused on ER,N, the compliance side should understand funding also.

**Page 3: [22] Comment [MSACCN45] McBride, Sean A CIV CNRMA, N00L 4/18/2016 1:58:00 PM**



**Page 3: [23] Comment [LN46] Lindsay Nehm 4/18/2016 2:35:00 PM**



**Page 6: [24] Comment [LN60] Lindsay Nehm 4/18/2016 1:58:00 PM**

CNIC N3/N45-NAVFAC EV: Navy Fire and Emergency Services has approximately 50k gallons of 3M AFFF (PFOS) and ~82K (PFOA) of the 132k gals AFFF in the current inventory. Of the 132K gallons in the current inventory, approximately 70k gallons is in storage (containerized - 5/55 gallon drums) and approximately 64k gallons is in fire trucks' tank systems. Estimated quantity of AFFF to be disposed of from draining the trucks' tank systems/triple rinsing is approximately 254k gallons. Thus, total estimated disposal quantity includes 70k gallons of containerized AFFF and approximately 254k gallons which will need to be containerized for disposal. To capture accurate disposal cost estimates from the AFFF storage/estimated effluent recovery will require detailed assessment

at regions/installations. Significant disposal costs anticipated. Who is the resource sponsor for the disposal costs? Can the disposal costs be programmed for in POM19 or later? Rational: To get an accurate disposal cost estimates will require detailed assessment/coordination at Region N3/N4 staff. We may encounter significant costs to containerize the recovered AFFF from trucks - since this action involves three estimated rinses there might also be some regulatory analysis concerning sampling/testing and waste characterization assessment. In addition to potential sampling/testing/characterization issues the processed AFFF would have to be containerized into drums for shipment in accordance with state specific regulations. To facilitate budget planning, POM19 would provide flexibility of program implementation. Significant disposal cost anticipated is currently not budgeted.

**Page 6: [25] Comment [LN63]**

**Lindsay Nehm**

**4/18/2016 1:58:00 PM**

NAVFAC EV: The policy focuses on replacement and disposal of systems without proper containment. Recommend adding in language to provide guidance on if, when, and how those systems with containment should be replaced. Rational: While containment may be provided, containment is only effective when maintained and operated (e.g. hangar containment is ineffective if doors are left open, which is fairly common)

**Page 6: [26] Comment [mrp64]**

**Pletke, Mike CIV OPNAV, N45**

**4/18/2016 1:58:00 PM**

All of the remaining requirements, with the exception of R&D on PFC-free alternatives, should only be valid if new formulations of AFFF do not contain high levels of other PFCs of concern. It does no good to simply swap PFOA for another PFC of concern.