

# **The Navy's PFAS Contamination of Whidbey Island's Aquifer and Drinking Water**

## **Where It Is, Who Is Impacted, What Can Be Done**

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## **FACTS: Whidbey Island's PFAS Contamination**

Portions of Whidbey Island's sole source aquifer are contaminated with Perfluoroalkyls poly- and perfluoroalkyl substances (PFASs) that have leaked from Navy property. PFASs have been linked to cancer, fetal health disorders, damage to the immune system, and heart disease.

- An unknown number of private and public wells near Oak Harbor and Coupeville are contaminated with PFASs—as is the groundwater beneath parcels of land without wells.
- After more than 2 years, families that have had to abandon their wells are still drinking, cooking, and brushing their teeth with bottled water from the Navy.<sup>1</sup>
- The Town of Coupeville's water is contaminated with 7 PFASs.<sup>2</sup> Since 2016, levels have exceeded health advisories of a number of states—and have been several times higher than the 'Minimum Risk Level' proposed by U.S. Department of Health's Agency for Toxic Substances and Disease Registry.<sup>3</sup>
- PFASs in Coupeville's water, which serves a hospital and three public schools, has often exceeded the State Board of Health's proposed threshold for notification of pregnant and nursing women, women wanting to become pregnant, and parents of infants.<sup>4</sup>
- The contamination isn't going away. The highest level of a PFAS found in Coupeville's main supply well was detected in late 2018, more than 2 years after the well was first tested.<sup>5</sup> Even higher levels are on adjacent Navy property.
- Both of Coupeville's two well fields now show contamination with PFASs being found in wells where they were not previously detected.<sup>6</sup> New PFAS contamination has been found in Ault Field surface water that discharges to Puget Sound.<sup>7</sup>
- The Navy and Coupeville have a history of not telling people about all the PFASs in the water. Coupeville kept complete testing results from the public for almost a year.<sup>8</sup>
- The PFAS filter planned for Coupeville's in late 2019 will reduce, but not eliminate PFASs.<sup>9</sup> Only 2 PFASs are identified for reducing, and only to a certain level.<sup>10</sup>
- Coupeville and the Navy have not publicly committed to the most efficient state-of-the-art PFAS treatment system—or for post-filter monitoring that will assure the reporting of *all* levels of PFAS.<sup>11</sup>

The Navy's PFASs are still migrating through the aquifer and discharging to Penn Cove and the Puget Sound. How far and how fast contamination is spreading is unknown.

**Read the Report - The Navy's PFAS Contamination  
Whidbey Island's Aquifer and Drinking Water - Where It Is, Who Is Being Impacted, What Can Be Done  
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## The Politics of Pollution

PFASs in Whidbey Island's aquifer comes from the fire-fighting foam used in Navy training exercises—not from candy wrappers and consumer products often mentioned by the Navy. The PFAS contamination of people and the environment resulting from the use of this foam was predictable and preventable.

The Department of Defense knew of the foam's dangers for over thirty years. By 2001, it knew the foams could break down into the toxic chemicals that entered streams and groundwater at several military bases, and that the foams could potentially be polluting drinking water wells.<sup>12</sup>

Though labeled as "emerging" contaminants by EPA, PFASs have been showing up in drinking water and people's blood for decades. In 2006, the EPA's Science Advisory Panel labeled PFOA (the PFAS found in the highest concentrations on Whidbey Island) a likely human carcinogen. That was the same year that EPA backed away from banning manufacture of the chemicals and instead allowed them to be made and used for another decade.

The EPA's 'phaseout' of PFOA and closely related compounds announced in 2006 was the Bush Administration's chosen option over the prosecution of manufacturers and users who broke the law by covering up evidence of the chemical's hazards for decades.<sup>13</sup>

I was investigating PFASs in a number of states at the time, and had delivered internal company documents to the Justice Department evidencing prior knowledge of those hazards. As a consultant for an international union whose members were being exposed to PFASs, I participated in water sampling and organized meetings between pollution victims and government officials.<sup>14</sup>

Much has changed since I first worked on PFAS issues. The number of polluted communities has increased, as has the list of scientific studies confirming the risks and harms that were known or suspected. PFAS amounts in single digit parts per trillion are now recognized as a threat.

What have *not* changed are the tactics used by those who don't believe we have a right to know what's in the water we drink—and who don't want to publicize a pollution problem and pay the price to solve it.

- Laws are still used as an excuse not to act, even though nothing in them prevents needed actions from being taken.
- Levels of contamination are represented to be "safe" when credible scientific studies suggest they are not.
- Environmental sampling is done so as not to find and report all pollutants.
- Concerned citizens who speak out are still attacked and marginalized in hopes their message won't be heard.

Pollution problems are still treated as public relations problems where words like 'transparency' and 'pro-active' are defined to meet a polluter's needs.

The relationship between powerful polluters and the government should not be one of the 'tail wagging the dog.' But it often is. Concerns for business dollars should not take precedence over a community's right-to-know and be protected. But it too often does.

This is the political reality in which we live. It's why we need more citizen groups who serve as 'watchdogs' willing to challenge polluters and unresponsive public officials—even those that are feared or favored.

The Navy's actions have been little different than that of any big industrial polluter seeking to avoid bad publicity and reduce liability. Downplaying the seriousness of a problem, dragging out investigations, and keeping the public in the dark is what they do."

It is primarily because of outspoken pollution victims, their lawyers, and conscientious scientists and health professionals that we are making progress in what is a nationwide problem.

If people want to be protected, they've got to protect themselves. They can't sit back and wait on government agencies to act. That's that hard lesson learned by communities around the country.

Whidbey Island's public officials are not the first to accommodate a powerful polluter with economic clout. Nor are they the first to keep information from the public, supposedly for the public's own good. It's what polluters and politicians too often do—and will continue to do until the public or the courts make them stop.

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## Keeping the Public in the Dark

The Department of Defense began testing for PFASs in response to the EPA's Unregulated Contaminant Monitoring Rule of 2012.<sup>15</sup> In 2016, after finding that PFASs had seeped to the aquifer beneath its own property, the Navy began sampling nearby public and private drinking wells.

The Navy's community PFAS investigation was flawed by design. The people whose water was sampled had no input into what PFASs were sampled for or at what levels of detection.

- The Navy only sampled for *some* PFASs in the community—not for all the PFASs it knew to be in the aquifer. The Navy only sampled for three PFASs even though six were sampled for on its own property.<sup>16</sup>
- The Navy did not look for PFHpA and PFHxS in the community's water, even though both were found in its own water.<sup>17</sup>
- The Navy used higher detection limits when sampling the community's water than were used on its own property.<sup>18</sup> This allowed for some PFASs found in the Navy's water to go undetected and unreported in the community's water.<sup>19</sup>
- At the Navy's request, the Island County Health Department kept the plan for testing the community's water from the public until *after* testing was underway.<sup>20</sup>

Navy's initial investigation from November 2016 to June 2017 only looked for three PFASs and only for their presence above certain amounts.<sup>21</sup> It was *not* done to find out if residents were being exposed to PFASs—or to determine how far contamination had spread.

Had the Navy been interested in determining the seriousness and extent of contamination, it would have offered to sample potentially contaminated wells for *all* PFASs and used detection limits that would have revealed *any* detectable amount.

### PFAS Testing Predicament

Voluntary participation in the Navy's PFAS investigation was limited because the Navy would not commit to a specific and timely response to the finding of contamination—or to compensate victims for loss of property values that the discovery of the contamination could lead to.

## Navy Offers Expanded Sampling But Not For All Wells



**Potentially Contaminated Wells in Ault Field Area (top) and Coupeville OLF Area (bottom)<sup>22</sup>**

In September of 2017, at the direction of the Secretary of Defense, the Navy changed the practice of only testing for three PFASs in community water. Military projects performing PFAS sampling and analysis were told, "all drinking water sample results should include all 14 PFAS ..." <sup>23</sup> This change followed a complaint to the Secretary of the Navy and Secretary of Defense from a Whidbey Island citizen organization that detailed the inadequacy of the Navy's efforts.<sup>24</sup>

In October 2017, the Navy offered to retest *some* community drinking water wells on Whidbey Island. This re-testing was described in one Navy document as a "precautionary measure to ensure residents living near our installations are not being exposed to PFAS in off-base drinking water."<sup>25</sup> Another document said the purpose was to, "evaluate the seasonal and spatial variation of PFA and to evaluate filtration performance."<sup>26</sup>

Both would have been valid purposes for the Navy's retesting. However, the Navy conducted its retesting in a way that accomplished neither.

Instead of offering to resample *all* wells in areas of potential contamination, the Navy's expanded sampling of October 2017 was only available to owners of wells where PFOA or PFOS had been previously detected—and to those adjacent to a property where PFOA or PFOS had been detected *above* EPA's advisory level.<sup>27</sup>

A well on a property next to a location where PFAS had been found below EPA's advisory level was *not* eligible. Wells that may have been contaminated with up to 9 parts per trillion (ppt) of PFOA and up to 15 ppt of PFOS were excluded from resampling because these amounts would *not* have been detected in previous sampling.<sup>28</sup>

This limited eligibility for resampling of October 2017 excluded potentially contaminated wells—even some that might have been contaminated with PFASs exceeding the ATSDR's more recently proposed Minimum Risk Levels.

This limited sampling of October 2017 reduced the number of contaminated wells the Navy might have to count and do something about. It also ignored the reality of a spreading plume of contamination that could have reached wells where PFASs had not been previously found.

The well at the County's Rhododendron Park, where Little League Teams play and drink the water, was not eligible for the Navy's resampling of October 2017—even though it is close to the Navy's OLF and Coupeville's contaminated supply well. It had not been tested since December of 2016, and never for all PFASs in the aquifer.<sup>29</sup>

The Navy's community drinking water investigation was flawed by design. It limited the number of contaminated wells that could be found and the number eligible for future sampling and a promised "long term solution."

### More Sampling Finds More PFASs

Although not available to all well owners, the Navy's October 2017 testing for fourteen PFASs with more sensitive detection limits revealed PFASs not previously found.

- The Navy found, for the first time, PFBS, PFHxS and PFHpA in Coupeville's 'treated' drinking water.<sup>30</sup>
- PFAS migrating from the OLF had reached Coupeville's Fort Casey well field. Three of seven wells evidenced contamination.

## Coupeville's Contaminated Water

The Navy was not alone in keeping the public in the dark about the extent of the PFAS contamination.

In January of 2017, the Town of Coupeville announced it had independently tested its water for three PFASs and found only one (PFOA). Mayor Molly Hughes stated, "We will continue to be completely transparent as new issues arise and new information is received."



It was later revealed that the Town began testing its water for six PFASs, not just three, in November of 2016.<sup>31</sup> As of August 2017, the County Health Department had not been made aware of this testing.<sup>32</sup>

Coupeville officials waited until October 2017, almost a year, to tell water customers about all the chemicals in their water.<sup>33</sup> In addition to PFOA, the Town found PFHxS and PFHpA in its drinking water. Levels of PFHxS were almost as high as the PFOA.

PFHxS has been linked to, attention-deficit/hyperactivity disorder (ADHD) in children, suppression of the immune system and a decrease in antibody responses to vaccines.<sup>34,35,36</sup> It takes 8.5 years for the body to rid itself of half the PFHxS it has accumulated. Some states include both PFHxS and PFHpA in their health advisories.<sup>37</sup> Both were required in nationwide assessment testing of large public water systems.<sup>38</sup>

After PFASs were discovered in drinking water leaking from a former Air Force Base in New Hampshire, almost 1600 people who had been drinking the water from contaminated wells had their blood tested (366 children, 31 adolescents, 1181 adults). Elevated levels of PFOA, PFOS and PFHxS were found compared to national averages, with "significantly" higher concentrations found in children aged 11 years and younger. PFHxS is highest PFAS found in the blood.<sup>39</sup>

Coupeville has never tested its water for Perfluorohexanoic acid (PFHxA), another PFAS known to be migrating from Navy property.

In January and April of 2018, Coupeville received test results from the Navy showing PFHxA to be in the Town's water. PFHxA was not listed among those totaled in the Mayor's October 2018 Drinking Water Update. Had it been listed, the total PFASs reported to the public in Coupeville's water would have increased significantly.<sup>40</sup>

**PFASs Found in Coupeville and OLF and Ault Field Area Public and Private Wells**

Perfluorooctanoic Acid (PFOA)  
Perfluoroheptanoic Acid (PFHpA)  
Perfluorohexanesulfonic Acid (PFHxS)  
Perfluorohexanoic acid (PFHxA)  
Perfluorobutanesulfonic Acid (PFBS)  
Perfluorooctane Sulfonate (PFOS)<sup>41</sup>

## Denial and Blame-Shifting

When concerned citizens advertised the first public meeting about PFASs, Coupeville's Mayor Molly Hughes wrote that their use of the phrase "Contaminants in your water" was "meant to cause panic."<sup>42</sup>

The Mayor later wrote that Coupeville's water was "not technically contaminated."<sup>43</sup> She publicly accused a concerned citizen of "carelessly using the word 'contaminated' with reference to Coupeville's drinking water." The use of the term was characterized as an "intentional distortion" that was made "without regard to its emotional or economic effect."<sup>44</sup>

In fact, Coupeville's Mayor and Engineer used the term "contamination" in emails to other public officials when describing PFASs in the Town's water. All the PFASs found in Coupeville's water are listed as "contaminants" in the EPA's Unregulated Contaminant Monitoring Rule (UCMR3).

Coupeville may not have been legally required to monitor or report detections of these PFASs under UCMR3 because of its size. However, regulatory agencies encourage water systems that detect PFASs and other 'unregulated' chemicals to report them in their required annual Consumer Confidence Reports.<sup>45</sup>

Coupeville only identified the detection of PFOA in the June 2017 Consumer Confidence

Report sent to its customers. The PFHpA, PFHxS and PFBS that had been detected by the Town were not identified. According to the EPA, reporting such contaminants serves to:

"Improve public health protection by providing educational material to allow consumers to make educated decisions regarding any potential health risks pertaining to the quality, treatment, and management of their drinking water supply."

When Coupeville told its water customers it was "committed" to keeping them "informed about water issues" it wasn't walking its talk.

## Notifying Vulnerable Exposed Populations

The Washington State Department of Health is considering a proposed rule that would require water providers to notify vulnerable groups of people being exposed to PFASs in their drinking water.<sup>46</sup>

According to the proposed rule, if PFHxS, PFNA, PFHpA, PFOA, and PFOS combined are above 70 parts per trillion in the drinking water, public notification "must" be provided to:

- Pregnant and nursing women.
- Women planning to become pregnant.
- Parents, guardians, caregivers of infants.

Coupeville's drinking water, which serves the hospital, schools and child care centers has contained these combined PFASs above 70 parts per trillion when tested on October 2017, March 2018, and September 2018.<sup>47</sup>

## Schools, Hospital, and Children

In addition to the Coupeville's homes and businesses, the Town's PFAS contaminate water goes to three public schools attended by 900 students, including over 400 children attending Coupeville Elementary School. The school district extends beyond the Town's borders and stretches from the outskirts of Oak Harbor to Freeland.

The water going to these schools is not filtered for PFASs and there has been no notification to parents that the water their children are drinking at school contains PFASs at levels that may pose a risk of health harms.

### Whidbey General Hospital

On April 10, 2017, Whidbey General Hospital's board of directors was asked to install a filtration system to keep PFASs out of its water—or inform its patients, employees and visitors of the PFASs in the water. The next day, Coupeville

Mayor, Molly Hughes and hospital CEO, Geri Forbes exchanged emails proposing wording to be used in rejecting the request. When Forbes referenced the hospital's ice machine and drinking water filtration, Mayor Hughes wrote,

"I would leave out the part about your filter. Unless you know for a fact that you use activated charcoal and your filter system is large enough to treat the hospital's water and the media is changed out often enough, I think it's risky to imply you are treating your water for these compounds. Someone will check. Richard has already threatened to test it on the sly"<sup>48</sup>

In a September 19, 2017 Whidbey News Times article, the hospital announced that a one-time and not-to-be-repeated test found the hospital's water to be "just fine." George Senerth, executive director of facilities, stated, "The water coming from the town is fine." CEO Geri Forbes even stated she would drink the water.

In fact, the hospital's test of its own water for PFASs used different laboratories with different detection limits to compare before and after test results of its water.<sup>49</sup> The level of PFHxS found in the "pre-filter" sample would not have been detected in the "post-filter" analysis.<sup>50</sup>

## The Truth About Regulatory Standards

The Navy and public officials are quick to point out that PFASs are unregulated chemicals without enforceable standards. It's been a convenient but poor excuse for not telling people about all the chemicals they are drinking.

In fact, a chemical could be suspected or even proven to have adverse health effects and still not be regulated with an enforceable standard.<sup>51</sup> Many such chemicals have been detected in drinking water above the levels that authoritative scientific studies have found to pose health risks.<sup>52</sup>

- Hexavalent chromium, an industrial chemical made notorious by the film "Erin Brockovich," is still unregulated after being detected in the drinking water of 250 million Americans.
- The solvent 1,4-dioxane, a "likely human carcinogen, has been linked to liver and kidney damage but remains unregulated.

Although EPA hasn't established enforceable standards for PFASs, it established Lifetime Health Advisory Levels—but only for two of them. The EPA's advisory level for PFOA and

PFOS in drinking water is 70 parts per trillion (ppt) individually or combined.

EPA's advisory level has long been criticized for not being adequately protective, which is why health officials in some states have set far more protective advisories. These States include: Connecticut, Minnesota, New Jersey, and Vermont.

More protective Minimum Risk Levels have been proposed by the U.S. Department of Health's Agency for Toxic Substances and Disease Registry.<sup>53</sup>

## Increased Concern for Lower Levels

The Navy and public officials often downplay the seriousness of PFAS contamination by comparing the amounts in drinking water to drops in a swimming pool. What they don't say is that such small amounts are a matter of great concern to scientists and health officials.

- PFASs can accumulate and stay in the body for years and result in a person having higher levels in their blood than that in the water they drink.<sup>54</sup>
- Some scientists say the maximum contaminate level for PFOA should be less than 1 part per trillion or no more than 3.<sup>55</sup>

The new toxicological profiles released by the federal Agency for Toxic Substances and Disease Registry (ATSDR) in June of 2018, drops the level at which no harm would be expected from exposure to people.

- The new levels proposed for PFOS and PFOA are seven to ten times lower than EPA's thresholds. Some scientists say they should be even lower.
- The ATSDR "minimum risk levels" for exposure for an intermediate time period of 15-364 days translate to approximately 7-ppt for PFOS and 11-ppt for PFOA.<sup>56</sup> The agency also proposed minimum risk levels for PHF<sub>x</sub>S and PFNA.

ATSDR, a division of the Department of Health and Human Services, based its findings on a comprehensive review of case histories and scientific studies, *including those not previously considered by the EPA.*

The ATSDR proposal is based in part on the chemicals' risk of weakening the immune system. The Trump Administration had attempted to suppress the study.<sup>57</sup>

## How PFASs Go Undetected

If someone doesn't want to find a problem they might not look for it—or not look very hard. This is what polluters can do when they have samples of water taken and analyzed for contaminants. This is what the EPA and Department of Defense have done according to the largest drinking water test lab in the country.

"The EPA and the Department of Defense calibrated water tests to exclude some harmful levels of contamination and only register especially high concentrations of chemicals."<sup>58</sup>

Laboratories that test for PFASs in drinking water can reliably detect them at 1-2 parts per trillion. However, if a laboratory uses higher detection limits, the PFAS won't be found—even if it is in the water being analyzed.

In 2016, when the Washington State Department of Ecology tested *wastewater discharges* from municipalities to assess impacts on fish, it looked for PFASs at 1.0–2.0 parts per trillion—much less than the amounts that the Navy and Coupeville have looked for in drinking water.<sup>59</sup>

Both Coupeville and the Navy did the very thing that once got a DuPont facility in Ohio in trouble with the EPA more than ten years ago. DuPont failed to measure the PFOA pollution at the lowest possible level. According to the EPA, DuPont's sampling approach "was not acceptable or appropriate."

EPA told DuPont that measuring pollution "at the lowest level it can be detected" was EPA's "standard practice." DuPont then agreed to use a lower limit of 3-5 parts per trillion.<sup>60</sup> Both the Navy and the Town of Coupeville have sometimes used less sensitive detection limits.<sup>61</sup>

When the Navy or Coupeville say that a PFAS wasn't detected, they rarely say it wasn't detected *above a certain amount*. People wrongfully assume that something not detected is not present. In fact, when a sample result is described as Non-Detect or Undetected, it only means the contaminant wasn't detected at the level it was looked for.

When Coupeville's Mayor drafted the first News release about PFASs in the Town's water, she wrote that PFOS "wasn't detected." The Washington Department of Health suggested her draft be changed to "clarify that PFOS was not detected *above 10 ppt*."<sup>62</sup> The Town's final News Release only stated, "PFOS was not detected ..."

**Telling people about all PFASs in their water gives them the opportunity to reduce or eliminate exposures. To deny them information is to deny them the opportunity to protect themselves. Keeping the public in the dark also shields polluters from criticism and demands for cleanup.**

### Warning of Coming Contamination

According to scientists, PFBS is a 'sentinel' chemical because it travels further and faster in groundwater and can show up months or years ahead in places where PFOA or PFOS are ultimately detected.<sup>63</sup>

"It basically says the plume is on its way... PFOS and PFOA is likely on the way to your house...If you are on the hydrological flow path it's a matter of time and distance."<sup>64</sup>

The laboratories used by the Navy in its initial investigation of the community's water had the ability to detect PFBS less than 1 part per trillion.<sup>65</sup> However, the Navy only looked for PFBS in the community's water at 44 parts per trillion and above.<sup>66</sup>

## More PFAS Lawsuits Being Filed

There are more than a hundred cases against chemical companies, manufacturers, the U.S. military, and others for contaminating water supplies with toxic PFASs. These include class-action lawsuits in Colorado, Michigan, New York, and Pennsylvania, as well as a nationwide claim, seeking compensation for individuals exposed to the chemicals.

More than a dozen state government and utility lawsuits from Arizona to Florida are pursuing reimbursement for the cost of environmental cleanup and removing PFAS chemicals from drinking water.

Though the lawsuits target a number of defendants and contamination sources, most prominent are companies such as 3M, Tyco Fire Products, and Chemguard that manufactured firefighting foams and other products that use PFAS chemicals.

In February, 3M, the main producer of PFOA and PFOS, settled a groundwater pollution lawsuit with the state of Minnesota for \$850 million. In February 2017, DuPont agreed to pay residents of Ohio and West Virginia \$671 million for PFOA pollution from a manufacturing plant.<sup>67</sup>



A three judge federal appeals court determined in October of 2018 that the Navy can be sued for contaminating drinking water.<sup>68</sup> The court ruled against the Navy's claims that it has "sovereign" immunity against being sued unless it consents to be sued.

"The Third Circuit recognized that the families poisoned by PFAS, toxic chemicals linked to serious medical harms, deserve their day in court to seek medical surveillance so that emerging health problems are detected early,"  
*Attny Suzanne Novak, Washington, D.C. based Earthjustice*

## Navy's Not-So-Long Term Solution

The Navy and Coupeville agreed to a "long term solution" to the Town's PFAS contaminated water. Their "path forward" will have the Navy designing and paying for a filtration system that is supposed to be operational in late 2019 – about three years after contamination was discovered.

The Memorandum of Understanding has helped to get the issue out of the news, but not the PFASs out of the drinking water.

The Navy acknowledges that PFASs will be reduced, but not eliminated. How much of which PFASs will remain is the unanswered question. There are filtration systems that can drop PFASs to single digit levels and lower. There is no good reason for one not being installed in Coupeville. The agreement doesn't do the following:

- It doesn't obligate the Navy to pay for a state-of-the-art filter system instead of a less expensive and less efficient system.
- It doesn't call for PFASs to be removed to the greatest extent possible. If that were the intention, it would and should be in writing.
- It doesn't call for post-filter monitoring that will reveal the identity and detectable amounts of all the PFASs that will remain.
- It only calls for reducing PFOA/PFOS in the water - and only to an amount below the Navy's and Town's acceptable level of 70 parts per trillion.

The agreement allows for levels of PFOA/PFOS above the U.S. Department of Health and Human Services proposed Minimum Risk Levels. It says nothing about other PFASs, like PFHxS and PFHpA that are known to be in Coupeville's water. The Agency for Toxic Substances and Disease Registry has proposed Minimum Risk Levels for both.

The agreement says the filter will have "adaptive alternatives" to address "future applicable federal or state drinking water regulations." This wording would allow PFASs to remain in the water that are not regulated and not likely to be regulated in the near future.

This 'wait-and-see' approach to pollution prevention and public health protection makes laboratory guinea pigs out of people. It allows preventable exposure to chemicals that were suspected and later proven to be harmful.

The Navy and Coupeville also have a history of using detection limits that allowed for some PFASs to go undetected and unreported. Both have refused multiple requests to identify the detection limits to be used in the post filter sampling.<sup>69</sup> This benefits people most concerned about public image and tourist dollars—not those who want to know what's in their drinking water.

**For reasons not explained, the Town and Navy decided against relocating the Town's main supply well to an uncontaminated area.** Doing so might have cost more, but would have assured drinking water with no PFASs. Coupeville sought money from the State for a new well, and had inquired about purchasing land from the County for a new well in the summer of 2017.<sup>70</sup>

The agreement is important to those beyond Coupeville who operate, use, and pay for the schools and hospital receiving Coupeville's water. Although the MOU was supposed to have been discussed with "affected residents," it was not noticed for a hearing or posted for public comment.

The actions set forth in the agreement will expire in ten years, or "whenever the Navy determines the response action is no longer needed." It can be changed if both parties agree.

## More PFASs, More Exposure, No Cleanup

Coupeville's main supply well sits next to the OLF. On March 4, 2017 the Navy tested 27 on-site monitoring wells. More contaminated areas and higher levels of contamination were discovered. PFOA was found up to 1,190 ppt, PFOS up to 54.7, and PFBS up to 473 ppt.<sup>71</sup> The wells were not monitored for PFHxS or PFHpA.

The Navy's plans to drastically increase operations at OLF and Ault Field will increase the risk of accidents, the use of more PFAS containing foam, and further contamination of the aquifer.

## Some of What Can Be Done...

**There is no law or regulation that requires the Navy or local government to wait for standards or advisories before fully informing the public and removing PFASs from the aquifer and drinking water to the greatest extent possible.**

- Immediate steps should be taken to inform the public about the presence of all PFASs—and to eliminate or reduce the exposures people now experience.

- Coupeville's schools should notify the parents of students about the presence of all the PFASs in the water. The notification can also include information about the health advisories of EPA and the ATSDR.

- PFAS free water should be made available at the schools as soon as possible. Water stations can supply the water to students, teachers, and visitors. Warning stickers can be placed on water fountains.

- Well owners who have been living off bottled water delivered by the Navy should be offered in-home PFAS filters or external water tanks until they are connected to clean water systems.

- The Town of Coupeville should provide the notification to the specific populations identified in the State Department of Health's proposed rule for Group A Public Water Systems. While levels of PFASs have fluctuated in the Town's water, they have exceeded the Health Department's combined PFAS threshold for notification on several occasions. The Town need not wait for the rule to be implemented, during which time exposures will continue.

- The Navy should offer to retest all potentially contaminated wells for all fourteen PFASs (at a minimum) as was done in October of 2017. The lowest possible detection limits should be used in the analysis. The complete laboratory results (not just summary information) should be provided to those whose water is sampled.

- When the Navy offers to test wells, it should tell people what will be done in the event of contamination is found. A concentration threshold for taking action, such as providing a home filtration system or alternative water supply, should be based on ATSDR's Minimum Risk Levels.

- Island County should have its own potentially contaminated wells tested, including the well at Rhododendron Park. Testing should be done for 14 PFASs at a minimum with the lowest possible detection limits used in the analysis.

- Residents claim to have seen foam sprayed on a runway, something the Navy says "may" have happened. The Navy should conduct soil sampling to determine if there are areas that are contributing to the contamination of the aquifer. These soils should be remediated—even if doing so interferes with the Navy's training operations.

- Contaminated and potentially contaminated water should be monitored on a regular basis with results posted for public review.

- The Navy should not use PFAS containing foams for training OR for fire extinguishing. The Navy is currently exempted from recently passed state law that prohibits the use of these foams.

- The Navy and Town of Coupeville should revisit the Memorandum of Understanding regarding the installation of a PFAS filtration system for the Town's water.

- The consideration of terms regarding efforts to address the contamination of the Coupeville's water should be an open process. Proposals to address the Town's contaminated water should be open to members of affected parties—which includes the citizens who use and pay for the hospital and public schools using the Town's water.

- The Navy should have public meetings, as the Air Force has done, and respond to questions from the audience that everyone can hear and benefit from.

- The Navy should be asked to pay any costs associated with addressing the PFAS contamination it has caused.

**The Internet is replete with information about PFASs and examples of what communities around the country are doing to address problems. Sources of information and investigative reports are referenced in the endnotes of this report. They include:**

- National PFAS Contamination Coalition – <https://pfasproject.net/>  
"pfascoalition@googlegroups.com"
- Environmental Working Group <https://www.ewg.org/news-and-analysis>
- Toxics Action Center <https://toxicsaction.org>

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ENDNOTES

<sup>1</sup> One of first contaminated private wells was sampled by the Navy on 11/28/16.

<sup>2</sup> PFASs found in Drinking Water Samples taken by the Navy, Town of Coupeville, and/or Citizens:  
Perfluorooctanoic Acid (PFOA); Perfluoroheptanoic Acid (PFHpA); Perfluorohexanesulfonic Acid (PFHxS); Perfluorohexanoic acid (PFHxA); Perfluorobutanesulfonic Acid (PFBS); and \*Perfluorooctane Sulfonate (PFOS).  
\*PFOS was found in two residential samples taken by the Whidbey Water Keepers.

<sup>3</sup> <https://www.atsdr.cdc.gov/mrls/index.asp>: Minimum Risk Level (MRL): "The MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse, non-cancer health effects over a specified duration of exposure.; Laurel Schaidler, PhD environmental chemist and public health researcher at [SilentSpringIns](#), "The ATSDR's MRLs consider exposure for an intermediate time period of 15-364 days...and indicate potential health impacts at lower concentrations than the existing Health Advisories from EPA for PFOS and PFOA of 70 parts per trillion (ng/L)...Using the MRLs as a basis for a calculation that approximates how the (EPA)HA was derived, gives us lower numbers. These equivalent numbers are: PFOA - 11 ng/L, PFOS - 7 ng/L, PFHxS - 74 ng/L, PFNA - 11 ng/L"

<sup>4</sup> WSR 18-01-080 PREPROPOSAL STATEMENT OF INQUIRY STATE BOARD OF HEALTH; Washington State Department of Health fact sheet regarding the sampling of Group A Water Systems for five PFASs states, "If PFOA and PFOS combined are below 70 ppt, but PFHxS, PFNA, PFHpA, PFOA, and PFOS combined are above 70 ppt, you must provide public notice to specific populations."

<sup>5</sup> Analytical Results Report to Town of Coupeville, Anatek Labs, Inc., Sampling Date 9/6/18 for Well 108 (PFOA was 70.6 ppt)

<sup>6</sup> Validated results of Navy sampling of Coupeville's Fort Casey and Keystone wells in October 2017 and March of 2018.

<sup>7</sup> 10/18/18 Letter from Department of Navy to property owners identifying PFOA/PFOS levels in Clover Creek and Inlet to Duagalla Bay in excess of EPA's Health Advisory Level.

<sup>8</sup> 10/1/17 Letter to Coupeville Water Customers from Mayor Molly Hughes referencing testing of Coupeville's water for unidentified PFASs other than PFOA and PFOS.

<sup>9</sup> [Navy will put filter in Coupeville's water system](#), Whidbey News Time, 1/26/18: "Kendra Leibman, Remedial Project Manager with Navy Facilities Engineering Command said that the filtering system will lower the level of the chemical in the water, not remove it entirely."

<sup>10</sup> Memorandum of Understanding between The Town of Coupeville and the U.S. Department of the Navy entered on 6/23/18

<sup>11</sup> Email communications of 3/26/18, 4/2/18 and 4/26/18 between Richard Abraham and Leibman, Kendra R CIV NAVFAC NW, EV32 , Yuenger, Leslie A CIV NAVFAC NW, PAO, Welding, Mike T CIV NAS Whidbey Is, N01P, Vancleave, Charles W CIV NAVFAC NW, BD4, and Cunningham, Jennifer K NAVRESFORCOM

<sup>12</sup> [Records: Military knew of foam dangers in 2001](#)

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Kyle Bagenstose, Bucks County Courier, 7/15/17; [Military slow to respond to foam hazards, documents show](#), Burlington County Times, Kyle Bagenstose , 7/15/17

<sup>13</sup> [THE TEFLON TOXIN, How DuPont and the Pentagon Slipped Past the EPA](#), Sharon Lerner, The Intercept, 8/20/15

<sup>14</sup> Work History at [richardabrahamconsulting.com](#)

<sup>15</sup> In 2012, EPA added a requirement to sample for PFOS/PFOA under the Third Unregulated Contaminant Monitoring Rule (UCMR 3). All large and 800 small public water systems (PWS) were required to test for certain PFASs between 2013 and 2015.

<sup>16</sup> 10/11/16 Analytical Report for Service Request No: K1611172 (OLF)

<sup>17</sup> 10/11/16 Analytical Report for Service Request No: K1611172 (OLF)

<sup>18</sup> The Method Detection Limit Detection Limit for PFOA in the Navy's sampling of OLF drinking water was 3 ppt. For the Navy's community drinking water investigation, the Detection Limit for PFOA was about 9 ppt.; The Detection Limit for PFOS in the Navy's drinking water investigation on its OLF property was 10 ppt.; For the Navy's community investigation, the Detection Limit for PFOS was about 15 ppt.; The Detection Limit for PFBS in the Navy's OLF drinking water investigation was 10 ppt. For the Navy's community investigation, it was approx. 44 ppt.

<sup>19</sup> PFOS found in OLF monitoring wells MW05M, MW14M, MW03D and MW07M at 3.26, .898, .914, and .844 ppt respectively. These were below the Detection Limit of between 14 and 16 ppt used in the Navy's PFOS analysis of community water. (Sources: Table 1 Navy Results of PFOS, PFOA and PFBS in Groundwater, Outlying Landing Field Coupeville; Navy OLF Site Inspection Poster/Fact Sheet); PFBS was found in OLF monitoring wells MW05S and MW09M at 11.2 and 12.9 ppt respectively. The Detection Limit for PFBS in the Navy's community investigation was between 44 and 50 ppt (Sources: Table 1 Navy Results of PFOS, PFOA and PFBS in Groundwater, Outlying Landing Field Coupeville; Coupeville Validated Form 1/LCMS Organics Analysis Data Sheets)

<sup>20</sup> Public Records Request to Island County Board of Health from R. Abraham of 10/31/16 and response of 11/23/16; R. Abraham public records request of 2/3/2017 for Final Sampling and Analysis Plan; The Island County Health Dept. described by the Navy as a "partner," participated in the development of the plan to test wells in the community and helped with the Navy's messaging to the public. (The US EPA also had the plan, but would not release it.)

<sup>21</sup> 9/14/15 Navy Drinking Water Sampling Policy For Perfluorochemicals Perfluorooctane Sulfonate And Perfluorooctanoic Acid, From: Director, Energy and Environmental Readiness (OPNA V N45), To: Commander, Navy Installations Command (N4)

<sup>22</sup> Images were provided by the Island County Health Department and identify wells known to exist within a mile radius of contamination source.

<sup>23</sup> 9/28/17 letter From: Commander, Naval Facilities Engineering Command

Subj: Interim Per- And Polyfluoralkyl Substances (Pfas) Site Guidance For Na VFAC Remedial Project Managers(RPMS)/September 2017 Update

<sup>24</sup> 8/14/17 Letter from Citizens of Ebey's Reserve to The Honorable Sean J. Stackley, Acting Secretary of the Navy copied to Jim Mattis, Secretary of Defense, RE:

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Investigation of Perfluorinated Compounds (PFCs) Naval Air Station (NAS) Whidbey

<sup>25</sup> Final Coupeville Sampling Fact Sheet Jan 2018; Final Ault Field Sampling Fact Sheet Jan 2018

<sup>26</sup> Navy Drinking Water Summary of September 2017; Naval Air Station Whidbey Island OLF Coupeville Drinking Water Investigation October 2017

<sup>27</sup> Navy Fact Sheet: Naval Air Station Whidbey Island OLF Coupeville Drinking Water Investigation, October 2017, "The Navy is planning to conduct a follow on drinking water sampling event in October 2017. The Navy would like to resample drinking water wells where PFOS and/or PFOA were detected (above or below the EPA lifetime health advisory). In addition, the Navy would like to sample drinking water wells at properties located adjacent to properties with PFOS and/or PFOA exceedances, whether they were previously sampled or not."

<sup>28</sup> They would not have been detected because of the less sensitive detection limits that had been used in the analysis of samples. The Detection Limits used in the earlier phase of sampling averaged about 9 ppt for PFOA and 15 ppt for PFOS; NASWI Offsite DW Data Summary Table 091217

<sup>29</sup> Island County could have insisted that the well be tested, or tested it independently. It did neither.

<sup>30</sup> Validated results of Town of Coupeville and Fort Casey Treatment Plant (Post Treatment, Distribution Point) 10/19/17

<sup>31</sup> 10/31/16 Email to Molly Hughes from ALS Global noted that analysis of Town's water would be for six PFASs.

<sup>32</sup> County Hydrogeologist Doug Kelly, who was the Health Department's liaison with the Navy, stated in a 8/28/17 meeting with citizens that he was unaware that the Town of Coupeville had tested for more than three PFASs.

<sup>33</sup> 10/1/17 Letter to Coupeville Water Customers from Mayor Molly Hughes referencing testing of Coupeville's water for PFASs other than PFOA and PFOS.

<sup>34</sup> Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood, Journal of Immunotoxicology Volume 10 Issue 4, Pages: 373-379 Published: OCT-DEC 2013

<sup>35</sup> Exposure to Polyfluoroalkyl Chemicals and Attention Deficit/Hyperactivity Disorder in U.S. Children 12-15 Years of Age,

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC300>

<sup>36</sup> Agency for Toxic Substances and Disease Registry (ATSDR) Draft Toxicological Profile for Perfluoroalkyl Substances, June 2018

<sup>37</sup> Colorado Department of Public Health and the Environment included PFHpA along with PFOA and PFOS in its combined health advisory guidance level of 70 ppt, <https://www.colorado.gov/pacific/cdphe/PFCs/about/unregulated-substances>; Connecticut's "Action Level" above which the state can take action, is 70 ppt for the sum of PFOS, PFOA, PFNA, PFHxS, and PFHpA. (EPA only considers the sum of PFOA and PFOS)

<sup>38</sup> Unregulated Contaminant Monitoring Rule (UCMR3)

<sup>39</sup> Presentation, PFAS Testing at Pease, Highly Fluorinated Compounds – Social and Scientific Discovery Northeastern University, June 14, 2017, Andrea Amico, Alayna Davis, Michelle Dalton; State of New Hampshire Department of Health and Human Services Division of

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Public Health Services, Pease PFC Blood Testing Program: April 2015 – October 2015

<sup>40</sup> Navy sampling results of Coupeville's post treatment of water on 10/10/17, and 3/23/18 found PFHxA at 19.9 and 20.9 parts per trillion respectively.

<sup>41</sup> PFOS was found in two of six Coupeville tap water samples taken by Whidbey Water Keepers. PFOS has been found in the aquifer beneath the Navy's OLF and Ault Field

<sup>42</sup> 12/14/16 email to Willy LaRue and Kelly Riepma; 6/5/17 Email from Molly Hughes to G. Weed.

<sup>43</sup> Email From: Molly Hughes To: Grant Weed, 6/5/17

<sup>44</sup> 1/4/17 Published comments by Mayor Molly Hughes in response to Letter to the Editor by Maryon Atwood.

<sup>45</sup> Consumer Confidence Report (CCR) Rule, 63 FR 44511, 8/19/98, Vol. 63, No. 160

<sup>46</sup> The Department of Health's "PFAS Testing" information sheet 331-605 8/20/2018; [www.doh.wa.gov/drinkingwater](http://www.doh.wa.gov/drinkingwater).

<sup>47</sup> Coupeville's Water (after treatment) contained 80.91 ppt of the combined PFASs in the Navy's October 2017 Sampling; 79.07 ppt in Coupeville's own sampling of March 2018; and 76.2 ppt in Coupeville's sampling of September 2018.

<sup>48</sup> 4/11/17 Email from Mayor Molly Hughes to Whidbey Health CEO, Geri Forbes

<sup>49</sup> Anatek Labs, Inc Analytical Results Report 6/30/17; Edge Analytical Unregulated Contaminant Monitoring Report 8/14/17

<sup>50</sup> The Post Filter analysis used the UCMR3 reporting format that allowed for some PFASs to be reported as Non-Detect even when found in the water; PFHxS was found at 27.8 ppt in the water received from Coupeville. The Method Reporting Limit for PFHxS in the analysis of water after filtration was 30 ppt.

<sup>51</sup> See EPA.gov: The Safe Drinking Water Act says that a nation-wide standard cannot be established until the following three conditions are met: the EPA must find that a chemical has adverse health effects, that it occurs frequently at levels of public concern, and "In the sole judgment of the Administrator" there is a meaningful opportunity for health risk reduction for people served by public water systems. This means that a chemical could be suspected – or even proven – to have adverse health effects, but if public water systems across the country lack the capacity to remedy the threat, a national standard can't be established.

<sup>52</sup> Hidden Carcinogen Taints Tap Water, Consumer Products Nationwide - In Industry-Funded Studies, Trump's Chemical Safety Nominee Backed Exposures 1,000 Times Higher Than EPA's Risk Level.

Environmental Working Group - <https://www.ewg.org/tapwater/state-of-american-drinking-water>, 9/6/17,

<sup>53</sup> Agency for Toxic Substances and Disease Registry (ATSDR), Toxicological Profile for Perfluoroalkyls (Draft for Public Comment), Department of Health and Human Services, Public Health Service. 2018.

<sup>54</sup> US EPA-DuPont Consent Order - November 2006

<sup>55</sup> The Endocrine Disruption Exchange, 11/9/18 letter to New Hampshire Dept. of Environmental Services; Perfluorinated Alkyl Substances: Emerging Insights Into Health Risks, A Journal of Environmental and Occupational Health Policy 2015, Vol. 25(2).

<sup>56</sup> <https://www.atsdr.cdc.gov/mrls/index.asp>: Minimum Risk Level (MRL): "The MRL is an estimate of the daily

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human exposure to a hazardous substance that is likely to be without appreciable risk of adverse, non-cancer health effects over a specified duration of exposure.; [Laurel Schaidler](#), PhD environmental chemist and public health researcher at [SilentSpringIns](#), “The ATSDR’s MRLs consider exposure for an intermediate time period of 15-364 days...and indicate potential health impacts at lower concentrations than the existing Health Advisories from EPA for PFOS and PFOA of 70 parts per trillion (ng/L)...Using the MRLs as a basis for a calculation that approximates how the (EPA)HA was derived, gives us lower numbers. These equivalent numbers are: PFOA – 11 ng/L, PFOS – 7 ng/L, PFHxS – 74 ng/L, PFNA – 11 ng/L”

<sup>57</sup> Environmental Working Group – News and Analysis, 7/30/18

<sup>58</sup> presentation by Andrew Eaton, vice president of Eurofins Eaton Analytical, as reported in [BOMBS IN OUR BACKYARD](#) How the EPA and the Pentagon Downplayed a Growing Toxic Threat, Abrahm Lustgarten, PROPUBLICA 7/9/18

<sup>59</sup> Survey of Per - and Poly - fluoroalkyl Substances (PFASs) in Rivers and Lakes, 2016, Toxics Studies Unit, Environmental Assessment Program Washington State Department of Ecology

<sup>60</sup> [U.S. EPA finds C-8 in drinking water near Circleville](#), Akron Beacon Journal (Ohio), 8/17/05

<sup>61</sup> The Navy’s Detection Limits for PFOA analysis were lowered to 1-2 parts per trillion in its resampling of community water in October 2017. The detection limits in previous sampling had been approximately 8-9 part per trillion (ppt). The Town of Coupeville’s Laboratory results prior to June 2017 only identified Practical Quantitation Limits of 20 parts per trillion for PFOA. Subsequent results identified a “MDL” of 5 ppt.

<sup>62</sup> 12/7/16 email from DOH’s Steve Hulsman to Lauren Jenks and Coupeville Mayor Molly Hughes.

<sup>63</sup> [BOMBS IN OUR BACKYARD](#) How the EPA and the Pentagon Downplayed a Growing Toxic Threat, Abrahm Lustgarten, PROPUBLICA 7/9/18

<sup>64</sup> Jennifer Field, Professor of Environmental and Molecular Toxicology, Oregon State University. Field is a leading expert on test methods for PFAS compounds. The Department of Defense helps fund her research; [BOMBS IN OUR BACKYARD](#) How the EPA and the Pentagon Downplayed a Growing Toxic Threat, Abrahm Lustgarten, PROPUBLICA 7/9/18

<sup>65</sup> 12/30/16 Test America Laboratory Quote for Analysis of PFASs

<sup>66</sup> 12/7/16 Navy report of results for analysis of OLF area residential well water WI-CV-1RW-1216; The Navy lowered the detection limits for its October 2017 testing of community wells. However, this testing was not available to all potentially contaminated wells.

<sup>67</sup> [As PFAS Lawsuits Proliferate, Legal Tactics Emerge](#) *Individuals, utilities, and states seek monetary compensation for chemical pollution of water supplies*, Brett Walton, Water News, 12/14/18

<sup>68</sup> [Court sets precedent, rules Navy can be sued for PFAS claims](#), Kyle Bagenstose, The Intelligencer, 10/2/18, ([www.theintell.com](http://www.theintell.com))

<sup>69</sup> 4/1/18 Email From Rick Abraham to four Navy Officials; 4/6/18 Email From Rick Abraham to four Navy Officials; 3/26/18 Email from Richard Abraham to Navy officials

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<sup>70</sup> 6/5/17 Email from Molly Hughes to Grant Reed; 7/5/17 Email from Molly Hughes to Jill Wood; 8/2/17 Email from Town of Coupeville Engineer to Lindwall, Lydia, Toxics Cleanup Program WA Dept. of Ecology: Safe Drinking Water Action Grants;

<sup>71</sup> OLF Coupeville Site Inspection Fact Sheet and Poster, Navy Open House May 2017