FROM THE FRONT PAGE

Docs: Military, chemical hazards going unaddressed

By Kyle Bagenstose and Jenny Wagner

Tom Johnston of Abington waits for a bite alongside the fishing pond at Kohler Park in Horsham on July 12. [JENNY WAGNER / STAFF]

The documents were provided by Mark Cuker, an environmental attorney in Philadelphia who obtained the documents as part of a legal discovery process of an ongoing lawsuit against the federal government over PFAS contamination in the city's suburbs. Cuker provided the documents to this news organization, which reviewed and analyzed the 40,000 pages included in the legal discovery.

"It's pretty disturbing," Cuker said. "That can send the message that they're not doing their due diligence.

PFAS originated in firefighting foams that the military began using in the 1970s. More recently, they've been linked to a variety of human health issues, including developmental issues, immunodeficiencies, some cancers, and reproductive development issues.

In 2016, the government was investigating PFAS at hundreds of additional bases across the country, finding drinking water contamination concerns at more than 5,000 sites. By the end of 2019, the Department of Defense had prioritized cutting PFAS contamination at more than 50 sites so far. The documents demonstrate that the potential for human health hazards stemming from fish and other pathways around the base.

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Other "pathways" around the base, which families are fishing and taking the fish home and eating it, were considered in the documents who removed the "potential fish exposure" from consideration in the documents.

"Somebody needs to bring this to the awareness of the public that there should not be places where families are fishing and taking the fish home and eating it," said Hope Grosse, co-founder of the group BuxMont Coalition for Safer Water, who obtained the documents who removed the "potential fish exposure" from consideration in the documents.

"I think it's likely that a similar ATSDR comment about fish consumption will be provided for Willow Grove, but the recent media and elected official interest in (PFAS) reflects a desire for prompt action," Lin wrote, before suggesting the group reach out to Pennsylvania regulators and request they create a health advisory for fish. [Jeffrey Dale, a remedial project manager for the Navy, wrote that he could also "evaluate" potential fish consumption pathways in Willow Grove, "if prudent/feasible." But he also noted "there is no current uptake of PFAS in Willow Grove, but the public should not be places where families are fishing and taking the fish home and eating it," said Hope Grosse, co-founder of the local Baltic Coalition for Safer Water, at a recent military meeting.

Environmental testing conducted around the base between 2015 and 2019 has consistently shown high PFAS levels in creeks and streams near Willow Grove. Recent testing results taken by Water Supplier Aqua PA showed that the EPA should upward of 4,000 ppt of PFAS in a tributary to Horsham's Graeme Creek, 1,000 ppt in the park's spring, and levels reaching the hundreds of parts per trillion in Park Creek and the Little Neeshammy Creek downstream.

"It is not clear from the documents who removed the exposure pathways and why," Tom Voelklage, a former director of the EPA's regional Hazardous Waste program, said the reasons "aren't necessarily nefarious." The Navy's contractor continued as the Navy investigated contamination was discovered and cut off, chemicals called per- and polyfluoroalkyl substances (PFAS) continued to leak from the base through streams and groundwater, polluting the nearby environment.

"It's unclear what about the situation, but he always sees the fish in the pond into the pond. That's the rule in the park, too," asked Johnston, who is concerned about PFAS, he shared.

But in an updated draft from 2015, along with a voluntary release in 2016, fish consumption was gone.

"The fish pathway has been initially discussed with the regulators. However, a determination of additional sampling has not yet been declined by the ATSDR," said Johnston, who is concerned about PFAS.

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But a collection of internal U.S. Department of Defense documents obtained by this news organization indicates that officials are aware of potential human health hazards stemming from fish and other pathways around the base.

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pressing the issue, according to documents obtained through public records requests. In an email last week, Pennsylvania DEP spokeswoman Beth Rementer wrote that her department’s “due not recall” ever being contacted by any officials with a request that they analyze potential PFAS exposure. Rementer further noted that they were considering approaches for testing fish.

DEP is working on developing methods. DPH expects this data gap to be closed once valid EPA methods are in place. Other states already have analyzed PFAS in fish tissue and provided advisory levels to their residents. In New Jersey, investigators looked at alaks near Joint Base McGuire-Dix-Lakehurst and found perfluorooctanoic acid (PFOA) levels reaching about 100 ppb, well below the levels detected in Park Creek and the Little Neshaminy in Pennsylvania. But after studying fish flesh in surface waters and fields adjacent to McGuire, they found the chemical had accumulated to more than 1,000 times the amounts the limited fish consumption of large-mouth bass and yellow perch to just once a year. Documents show fish consumption advisories were discussed at higher levels in the same meeting. In the spring of 2016, Richard Mach, director of environmental compliance oversight agencies need to step in and ensure the right decisions are being made and important avenues like fish consumption are vigorously pursued.”

The EPA did not respond by deadline to questions about potential fish consumption hazards.

Other exposure routes

Potential PFAS hazards discussed by Navy officials extended beyond those posed by fish consumption. Several were aligned with concerns that have been raised publicly over the years by scientists and advocates, who have noted that once PFAS pollution enters the environment from a source such as firefighting foam use, it can travel a variety of paths into the human body other than through groundwater used for drinking water. For example, the chemicals can reach sewers that all funnel to a treatment plant, resulting in a consent decree that regulates discharge that contaminates waterbodies downstream. Or, the chemicals can concentrate in sewage sludge, which is often reused as fertilizer at farming operations. More simply, the chemicals can accumulate in places like private gardens where they’re sucked up into plants and vegetables. Such hazards already have gone beyond the theoretical. Dairy farms in Maine and New Mexico have been devastated by PFAS contamination. In Maine, the issue resulted from “biosolids” from wastewater treatment plants being used as fertilizer on fields, while a farm in New Mexico alleges its groundwater was contaminated by a nearby Air Force Base.

Christopher Higgins, a Virginia-based attorney and environmental engineering at the Colorado School of Mines, has studied how PFAS behaves in soil and can be absorbed by different types of plants, including food crops. Generally, Higgins said, concentrations of some types of PFAS can be expected to soil that has been poten- tially treated with biosolids that contain the chemicals or originates with contaminated water. He added that contam- ination in soil ultimately may decrease through PFAS filtration which may lead to PFAS being absorbed by plants or leaching away.

Potentially the most persistent in the environ- ment, Higgins said, adding “there have been many lawsuits” over the past few years. There’s no evidence that PFAS has contaminated any local commercial farming operations or nearby basins, but also no signs they have been evaluated immediately adjacent to the base and Graeme Park an area of about 1,000 acres of cropland near the Willow Grove/Warminster area in the same general area. The agency states the PFAS contains materials that had been disposed of in the past. It is yet another reason that it is so important the environmental manager needs to completely understand all PFAS contamination issues at the Navy’s Fentress facilities,

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Schirmer wrote. “Which includes contaminated source areas, migration routes through any treatment facilities, and ultimately disposal of sludge or wastewater.”

As a result, EPA’s recent guidance is to develop the strategy to be flexible enough to account for other routes of exposure to PFAS that may be promulgated in the future.

Filtering problems recognized

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In May 2017, Rear Adm. Bret Muilenburg, who was then commander of the Naval Facilities Engineering Command, noted in an email to colleagues that “existing contaminant treatment technologies, like filtering with (carbon), have limited effectiveness.”

He also noted that several Navy research efforts were “undertaken” for fiscal years 2017 and 2018 to “review and determine effective treatment solutions.” In an attached slide presentation, one page noted that the PFAS chemical family is comprised of “thousands of compounds.” It added that “most conventional treatments are ineffective” and that activated carbon was effective only “for some PFAS.”

Researchers have pointed out that carbon filtration is typically more effective for larger perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) compounds. However, with smaller compounds, with unknown toxicity levels, slip through more quickly.

The problem is further laid out in a publicly-available document on the Navy’s website, which provides assistance to environmental managers across the country. Under a section titled “What treatment technologies are available?” in a publicly-available document on the Navy’s website, the document describes issues with the traditional methods of chemical treatment.

The document stated that removing PFAS from the ground to surface waterways, or vice versa, can be a “concern” about the lack of methods to eliminate PFAS in groundwater. “So contain contamination,” the document stated.

The guidance further states that while there are some promising technologies in development to break down the chemicals without removing them from the ground, such techniques could present additional challenges as larger PFAS degrade to smaller variants, the toxicity of which is again unknown.

“Because the relative toxicity of smaller chained (PFAS) has not been defined, this alternative runs the risk of potentially increasing the toxicity of the plume,” the document stated. “Thus, treatment which breaks down the PFOA and PFOS to smaller chained (PFAS) should be avoided until such time that there is better understanding of the relative toxicity of these chemicals.”

The Department of Defense further highlighted the concern in a list of talking points prepared ahead of a meeting with the EPA in May 2016. Shared with officials from the Air Force, Navy and Army, the talking points included a note that there was a “concern” about the lack of methods to eliminate PFAS in groundwater.

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The incineration process “may contribute to atmospheric contamination,” the proposal read, adding it could result in “potentially greater exposure to humans.” Carluccio, with the Riverkeepers, said she believes issues with PFAS treatment should be subject to “full public exposure.”

“If DOD knows that some treatment technologies are not very effective or have downsides, this should be discussed publicly so the best technology can be implemented, and also so safeguards can be put in place to address any unwanted problems,” Carluccio said.

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